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sappi

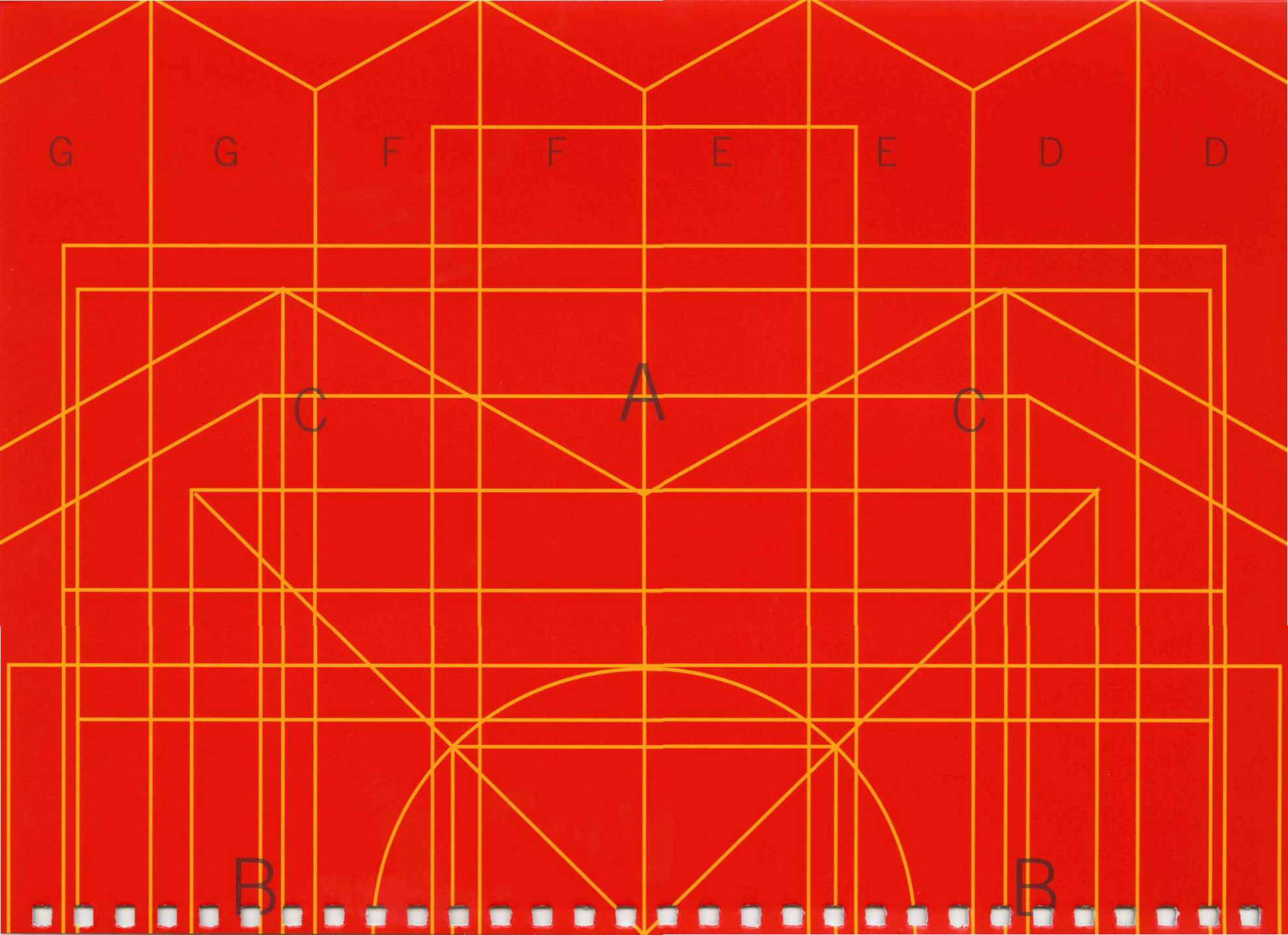
The Standard

A Sappi Guide to Designing for Print:

Tips, Techniques and Methods for

Achieving Optimum Printing Results

Scoring & Folding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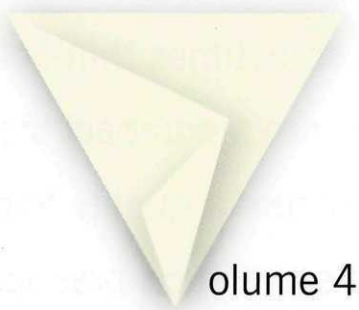


olume 4 of **The Standard** focuses on **folding and scoring**, two of the most important and most underutilized steps in designing for print. Brought to you by **Sappi**, The Standard is an educational reference tool designed to integrate the technical with the creative, and provide print communication professionals with the knowledge they need to take optimum advantage of the unique capabilities of quality papers. This edition of The Standard is printed on **Opus**, part of the Sappi family of environmentally responsible coated papers. In addition to the exceptionally versatile Opus line, the Sappi choice of North American-manufactured grades includes the ever-popular **McCoy**, **Somerset** and **Flo**.

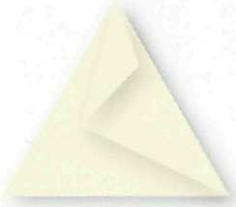
Too often folding and scoring are not considered a "real" part of design. Designers sometimes think of folding simply as a way to get a lot of information into a compact size, and scoring as a preventative measure to ensure a quality fold.

Folding and scoring do serve such practical purposes, but they can also be used to expand your creative options. Folding, particularly, is a dimensional tool that gives designers the ability to deliver a message with greater impact and interest. It helps organize information by literally letting it unfold in a logical order. When a thoughtfully chosen fold is made an integral part of the layout, it can help pace a story, direct the reader's attention to key points, and interject an element of surprise. Whether it's the addition of an elaborate die-cut, an extra panel or two, or a simple short trim on a cover, ignoring the possibilities is truly a missed opportunity.

Designers can choose from dozens of standard folding styles as well as from an array of intriguing "exotic" folds that defy convention. Most print facilities and binderies have folding machines that can handle the vast majority of folding styles, however they may need to look to the capabilities of a specialty bindery for the most challenging work.

Advances in folding and scoring technology have increased the quality and economy of the process, while providing printers with

more production flexibility. Attachments for folding machines allow scoring to be done during the folding process, and sophisticated web presses can be configured to output a surprising number of folding techniques inline.



s numerous as the possibilities are, folding is a process that requires careful advance planning. Designers should take nothing for granted because the consequences can be the opposite of the desired effect. Instead of making information easier to understand, it can confuse and annoy the reader. Instead of allowing the production process to run faster and smoother, it can slow it down from the prepress stage through the bindery. Instead of creating an economical direct-mail piece, it can unnecessarily raise postage costs or totally miss the mark.

The good news is that these problems can be avoided by understanding the fundamental principles of scoring and folding and the best ways to prepare files and support documents for the printer.

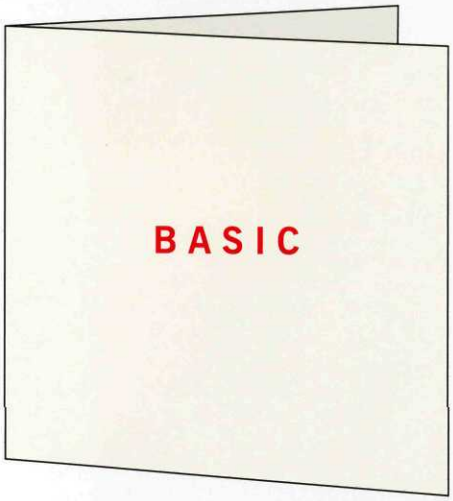
For this edition of The Standard, we turned to folding expert Trish Witkowski of **foldfactory.com** for tips on how to avoid the pitfalls and take advantage of all the benefits that creative folding and scoring have to offer.

FOLDING BASICS

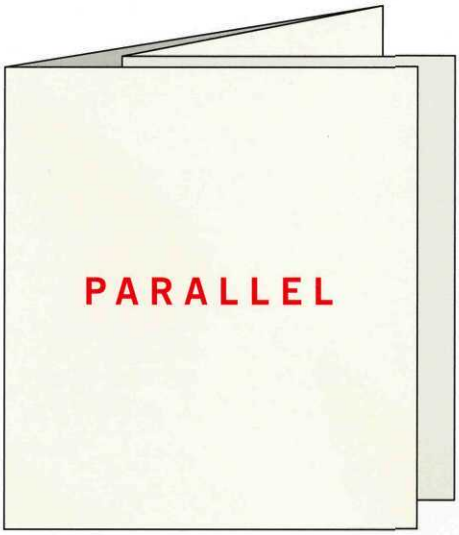
Scoring and folding capabilities differ by printer. Many printers maintain in-house bindery operations but, depending on the type and complexity of folds involved, may outsource folds that exceed their technical capabilities or production capacity to specialty binderies and contract out hand-folding steps to independent shops. No matter where the work is done, printers typically incorporate all bindery processes in their cost estimates, so it is rarely necessary to seek a separate bindery bid. This section focuses on issues that designers should consider during the concept development phase and as they prepare digital files for the printer.

LOL

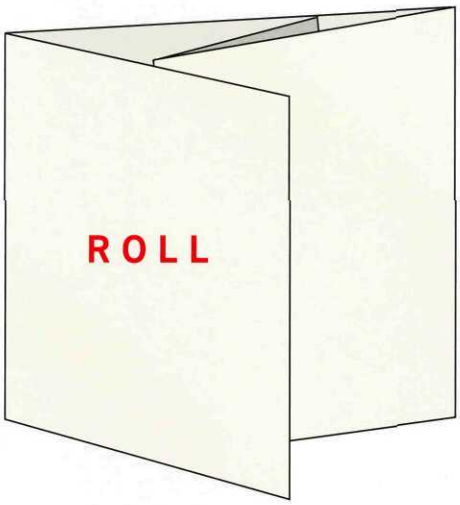
All folding styles have distinct characteristics that allow them to be classified into one of eight folding families, described here. Keep in mind that your choice of style may impact (sometimes significantly) makeready time, paper needs, folding machine speed, postage costs and other factors. In weighing design options, start by considering which folding family is right for the project and when you have settled on a folding style, discuss it with your printer.



The basic family consists of some of the easiest and most common folding styles that can be handled by virtually any printer or bindery.

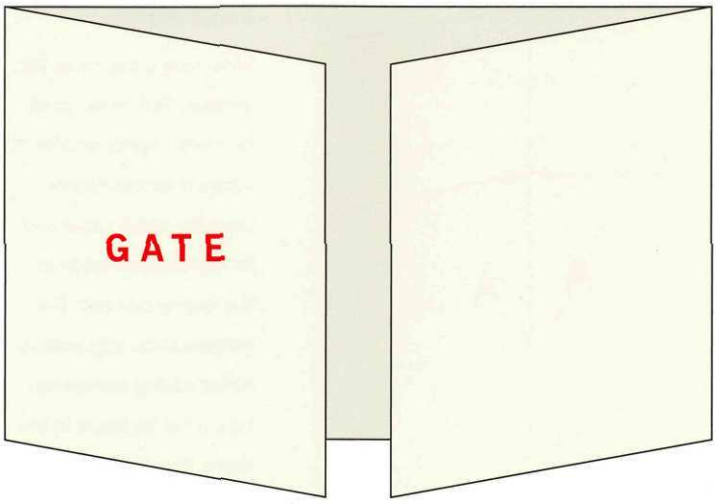


As its name implies, the parallel family consists of styles with panels that stay parallel to each other.



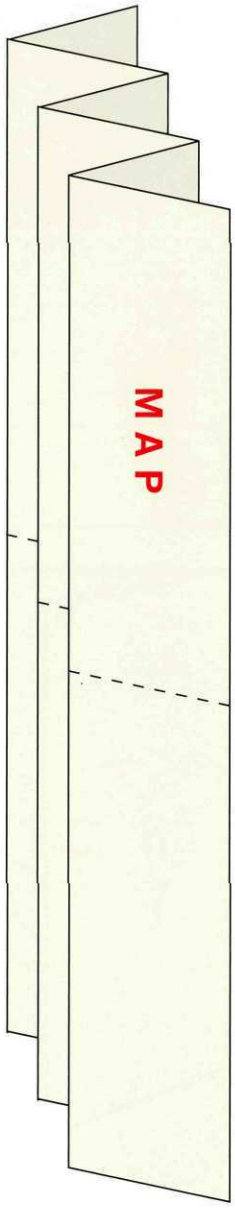
Roll folds consist of four or more panels that roll in on each other. A benefit of this family is that it accommodates multiple panels yet rolls compactly.

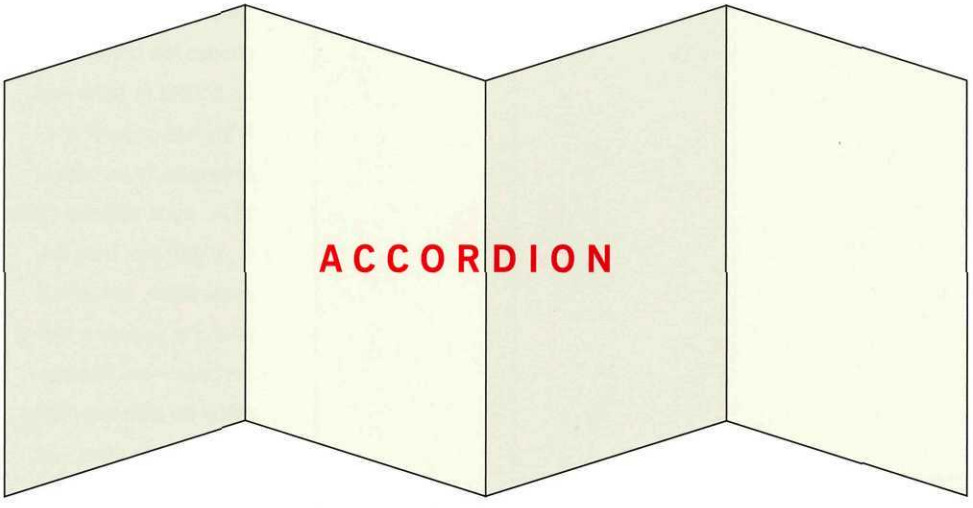
Built to open out into a large single-sheet format, styles in the poster family involve combination folds. The first serves as the base fold, the other is the folding style it adopts to achieve its finished format.



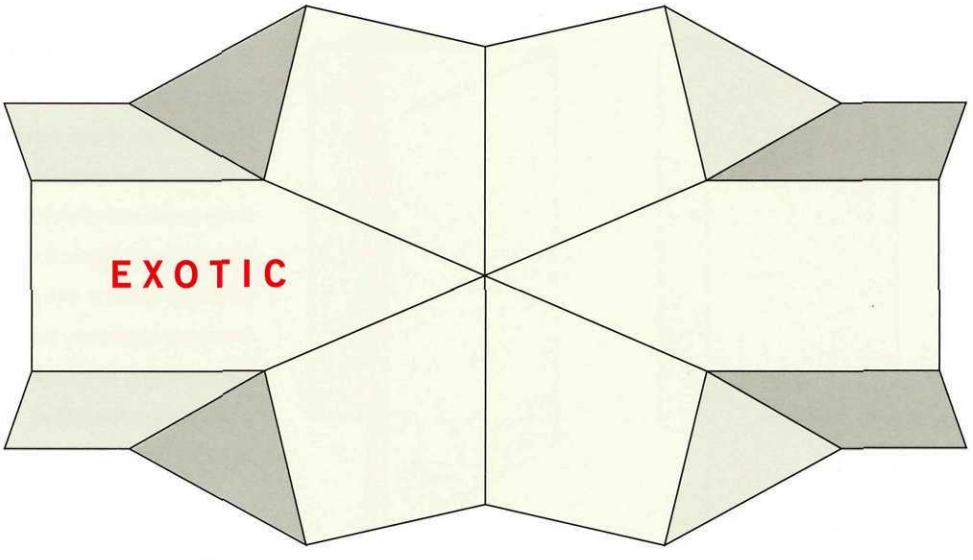
Gate folds are usually symmetrical, with two or more panels folding toward the center from opposing sides.

This folding family incorporates several accordion folds and is built in a tall format that opens into a large continuous layout rather than spreads. Maps are limited to lighter-weight stocks and may require special machine configurations.

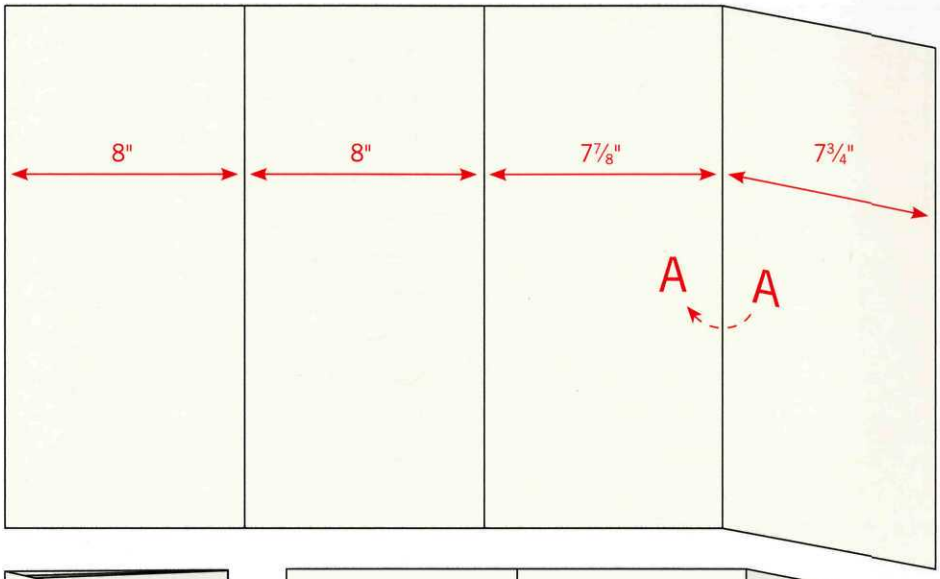


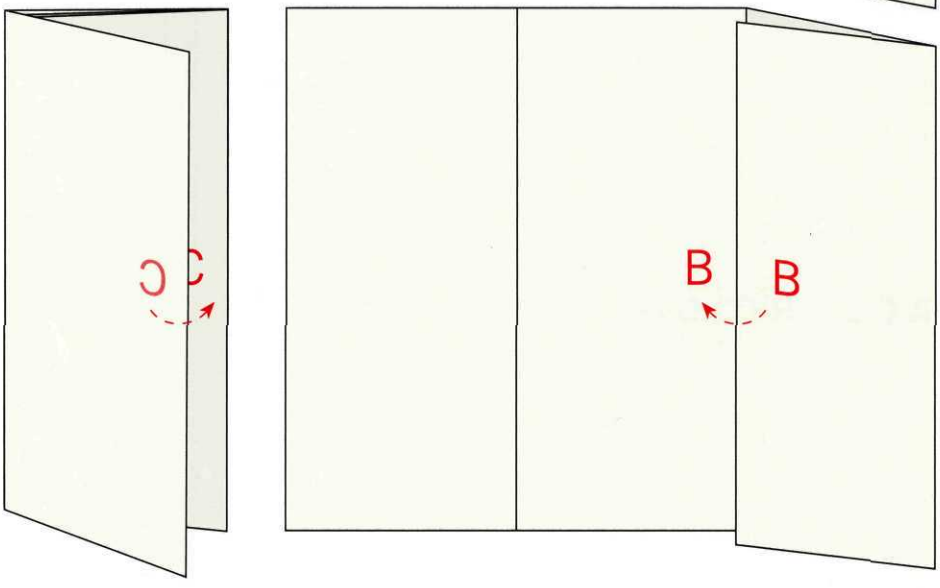


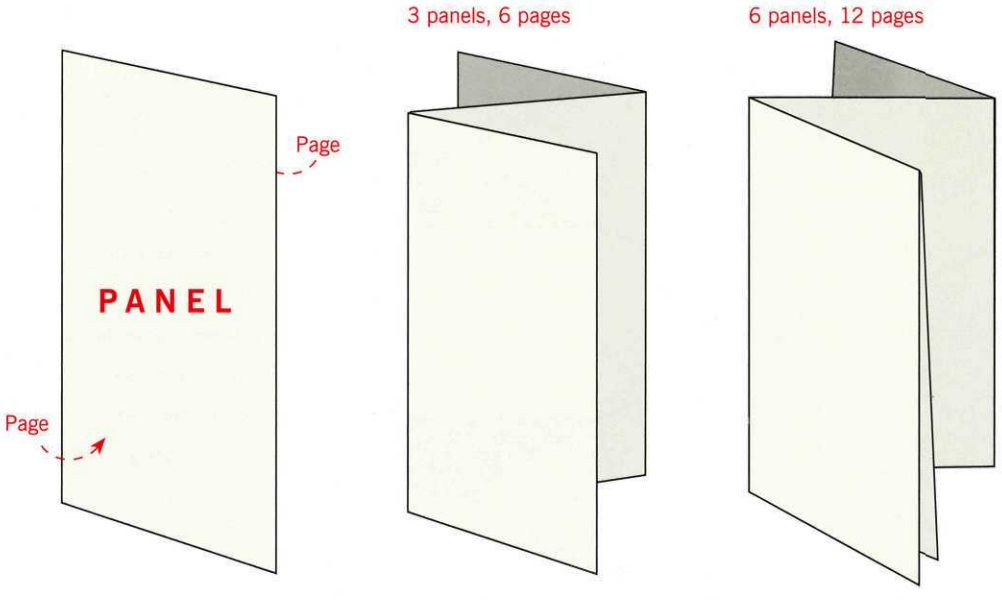
Accordion folds consist of three or more panels that zig-zag back and forth. Although panel count is flexible, it is important to work with the printer to determine the limitations of the press and bindery equipment.



Exotics include a dazzling array of specialty folds. This folding family also includes innovative proprietary folds that must be licensed from the patent-holder. Many of these styles require either the services of a specialty bindery and/or hand-folding.







Compensation

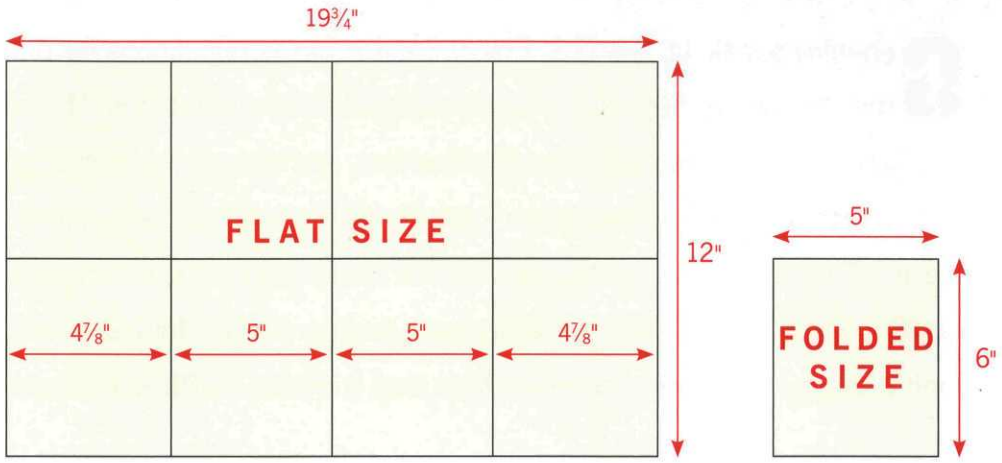
When one panel folds into another, that panel must be made slightly smaller to account for the dimensionality of the paper and for standard variation in the folding process. This mathematical adjustment, called folding compensation, must be made in the digital document to avoid noticeable shifts in color breaks and margins. The general rule for folding one panel into another is to shorten the fold-in panel by 3/32nd to 1/8th inch. If the fold-in panel is a broadside, or on heavy cover stock, subtract 1/8th to 3/16th inch from the panel width. Ask your printer to provide a folding template – a production-ready file with fold marks and guides in place – or download one from an online template service such as foldfactory.com.

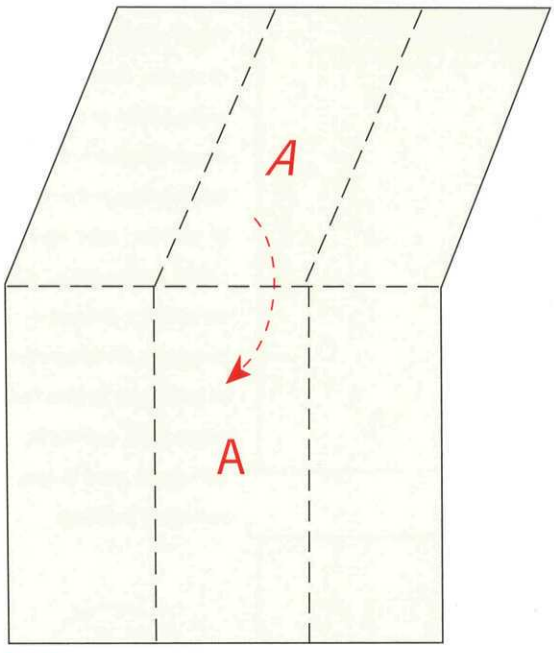
Panels vs. Pages

Panels are two-sided sections of the final folded piece. A page is one side of a panel. Center example: a three panel accordion fold has six pages. Right: If the same fold is made into a broadside accordion, the piece changes to six panels and the page count rises to 12.

Flat Size vs. Folded Size

The flat size is the exact dimension of the printed, trimmed piece when laid flat, including folding compensation. The folded size is the exact dimensions of the finished folded piece.

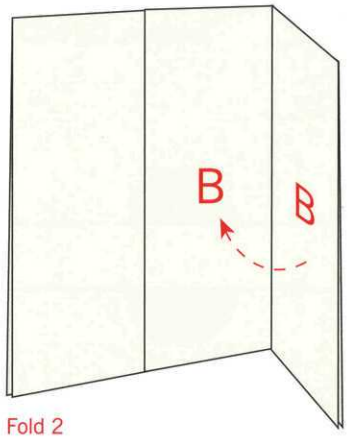




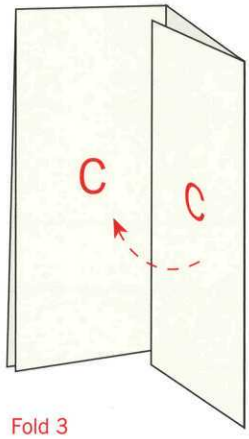
Fold 1

Folding Sequence Dummies

Always provide your printer with a folding dummy that shows the sequence of folds and which panels meet. Because everyone involved in the process will use this sequenced dummy as a guide, don't leave anything to misinterpretation. Use letters or numbers to label panels that will fold first and touch. Continue the process until the fold is complete.



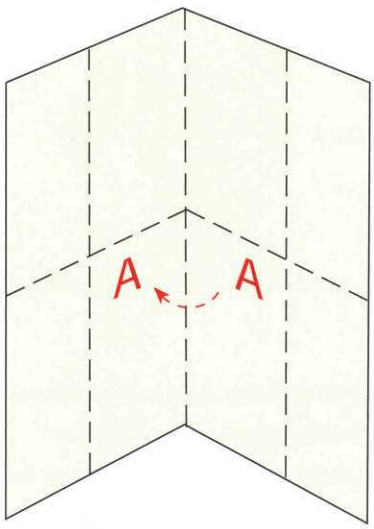
Fold 2



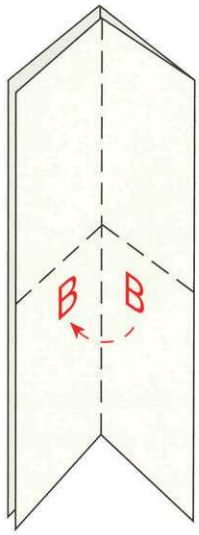
Fold 3

Parallel Folds vs. Right-Angle Folds

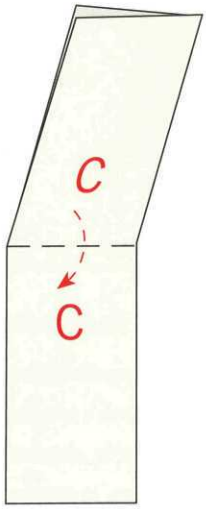
Whatever the folding style, the first fold is always a parallel fold. The next fold can either be parallel to the first or 90-degrees to it, forming a right angle. This terminology is useful if you need to describe a fold to your printer.



Parallel Fold



Parallel Fold



Right-Angle Fold

GLOSSARY OF FOLDING AND SCORING TERMS

ACCORDION FOLD

Two or more parallel folds that go in opposite directions, forming a zig-zag appearance.

BINDERY

A facility that performs post-press finishing operations such as folding, binding, inserting, etc.

BLEED

Ink coverage that extends past the trim edge to compensate for movement on press and trim variations in the finishing stages. A designer should extend bleeds at least 1/8" past the document edge before sending a digital file to the printer.

BROADSIDE

A broadside-style fold doubles its area by folding in half on itself before any characteristic folding style is created. For example, a broadside letter fold is 12 pages, whereas the standard letter fold is six.

CALIPER

The measure of paper thickness expressed in thousandths of an inch.

COMPENSATION

A mathematical adjustment in panel length and/or width made to accommodate for the dimensionality of the sheet, and for standard variation in the folding process.

CONVERTING

The process of turning sheets of paper into other paper products such as envelopes, cartons, brochures, folders, etc.

CRACKING

The breaking of paper fibers at the fold caused by the stress of the folding process. A fold against the grain on a heavyweight sheet and dark solid ink coverage may exacerbate the visibility of cracking. Scoring the sheet before folding helps to alleviate the problem.

CROSS-GRAIN FOLD

Folding at a right angle to the grain direction of the paper stock. Also known as "against the grain."

CUTTER

A machine for cutting paper stock. Also called a guillotine cutter.

DIE

A pattern of knives or metal tools used to crease, stamp, cut, perforate or emboss into a substrate.

DIE-CUT

Using sharp steel rules to cut paper or board into a specified shape.

DIE-LINE

For the die-cutting process, a line drawn by the designer or prepress professional that shows the print-finisher where to place the die.

DOG-EAR

An unsightly bend at the corner of a folded sheet caused by snagging in the folding machinery or careless handling.

FINISHING

An operation completed after the printing process. This includes die-cutting, scoring, folding, gluing, foil stamping, laminating, collating, binding and more. Finishing units may be offline or attached to the end of a press.

FINISHED SIZE

Finished size is the exact dimension of the piece when completely folded and trimmed. Also called folded size.

FLAT SIZE

The exact dimensions of a finished piece when laid out flat.

FOLDING DUMMY

A paper mock-up to show the bindery exactly how the printed piece is intended to fold.

FOLD INDICATION MARK

Visual guide that indicates where a printed piece will fold. Normally shown as a dotted line.

GATE FOLD

When two or more panels fold in toward the center from opposing sides.

GRAIN DIRECTION

In the commercial papermaking process, pulp fibers align themselves in a single direction – hence, the terms "with the grain" and "against the grain."

INLINE FINISHING

Manufacturing operations such as addressing, sorting, scoring, folding, die-cutting and converting that are performed as part of a continuous operation that occurs on press right after the printing process or on a single piece of equipment as part of the folding/ binding process.

KISS-CUT

For peel-off labels, to die-cut the top layer but not the backing of self-adhesive paper.

LITHO SCORE

A litho score is made on press by a scoring rule mounted onto one of the impression cylinders.

MECHANICAL FOLDING

Folding that is automated and done on a machine, as opposed to hand folding.

PAGE

One side of a panel.

PANEL

A small sheet having two pages, one on each side. A panel is defined by the crease of a fold or the trimmed edge.

PARALLEL FOLD

Folds made parallel to each other.

PERFORATION

Punching a row of small holes or incisions into a sheet of paper to make it easier to detach, to allow air to escape from signatures, or to help prevent wrinkling when folded.

POP-UP

A sheet that is specially cut and folded so that, when opened, it takes on a three-dimensional effect.

PROPRIETARY FOLDS

These are formats and structures owned and patented as Intellectual Property by individuals or companies. Permission must be obtained for their use. Third-party usage rights are sometimes granted under a royalty or licensing agreement, but at the sole discretion of the patent holder.

RIGHT-ANGLE FOLD

A fold that is perpendicular to another fold.

SCORE

To compress or crease paper to facilitate folding or tearing, to prevent cracking, and to ensure proper placement of the fold.

SELF-MAILER

A folded piece that is intended to go through the mail system without the protection of an envelope. Self-mailers are subject to the rules and regulations of the U.S. Postal Service.

SIGNATURE

A folded, printed sheet that forms a section of a printed piece or book. Paging for a signature is usually a multiple of four or eight.

SOFT FOLD

An additional gentle fold in half made by machine, generally for mailing purposes.

SUBSTRATE

Any base material with a surface that can be printed or coated.

WAFER SEAL

Also commonly called a tab, an adhesive seal used to keep a folded piece from opening. Used to meet mailing regulations or for decorative effect.

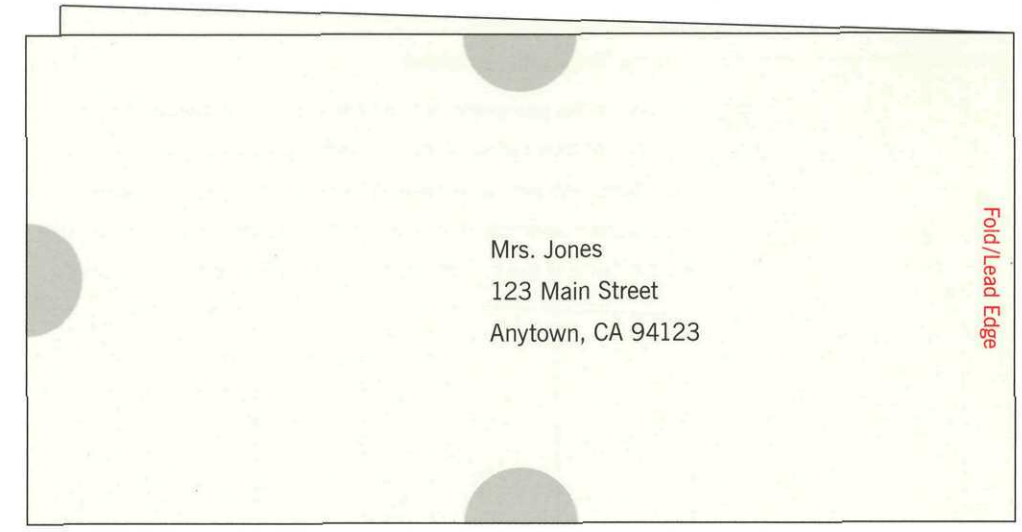
Z FOLD

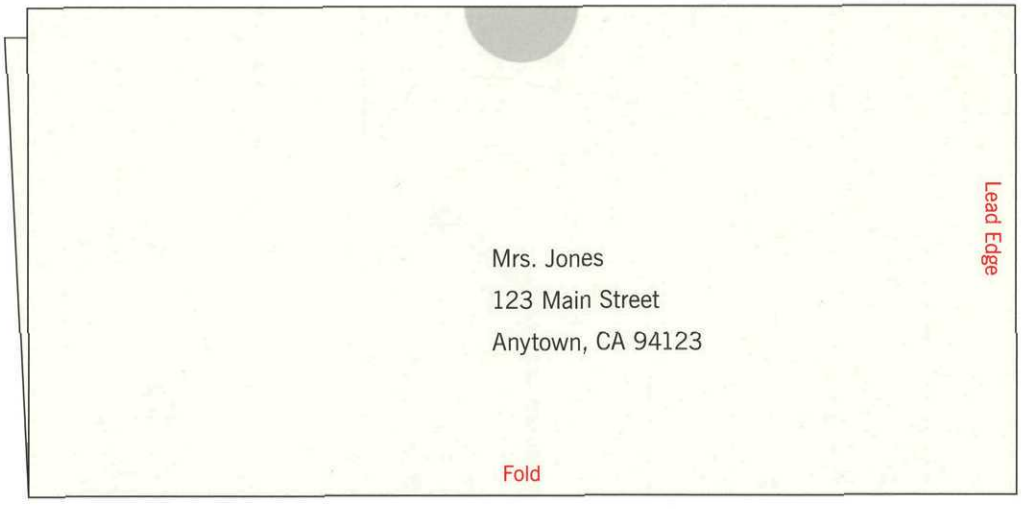
A fold where the panels fold in opposite directions forming a Z appearance. Also known as an accordion fold.

This glossary defines basic terms you are likely to hear when discussing scoring and folding with your printer.

sappi

Generally speaking, the U.S. Postal Service bases regulations for direct mail on what can run through its high-speed automated processing machines. "Machinable" mailpieces – i.e., fall within the min/max size specifications, are rectangular in shape, constructed of paper, and sealed per USPS specification – are charged at a lower rate than "non-machinable" pieces. The rules are too extensive to cover completely here, so review them closely on the USPS website. Also, **before finalizing your design, show a folded mock-up as you hope to mail it to your post office to make sure that it meets USPS guidelines.**





Fold and Address Placement

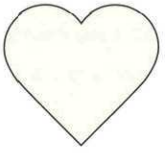
Look at the mailing panel of your mailpiece: the right edge is considered the lead edge. If the folds are vertical, there must be a fold at the lead edge. It is no longer acceptable to tab the lead edge. Any remaining open edges must be tabbed or glued. If the fold is horizontal, the fold should be positioned below the address at the bottom edge. In either case, the address must always be parallel to the longest dimension of the piece, or you will receive a hefty surcharge for non-machinability.

Sealing Methods

Paper weight, number of sheets, dimension, and location of open edges determine USPS tabbing requirements. In addition, tabs, also called "wafer seals," can be used for decorative purposes. An alternative to tabbing is to glue the edges shut, a process commonly used in long-run inline finishing.

circular

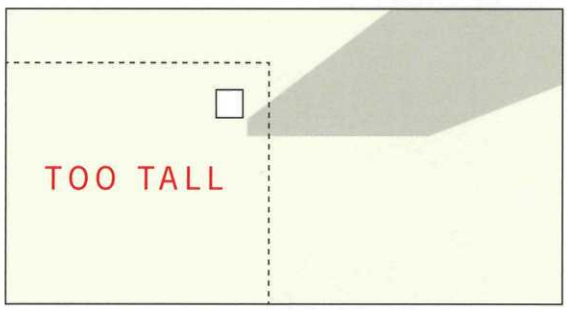
square with rounded corners


custom

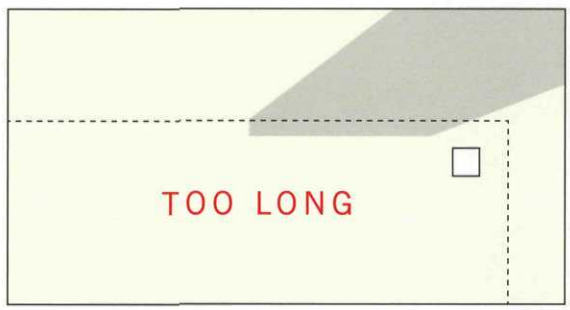
Letter-Size Mail Dimensional Standards Template

A full-size version of this template (available free from the post office) will tell you whether your mailpiece meets machinable requirements.

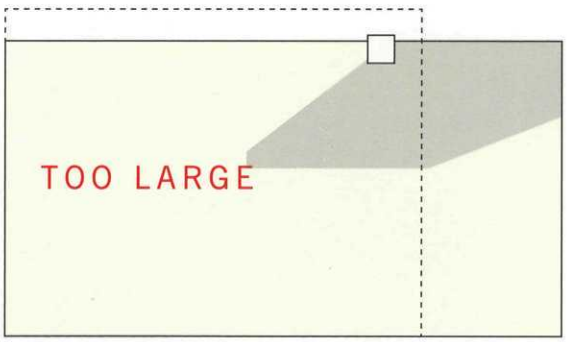
To meet machinable requirements and avoid surcharges, the tip of the upper right corner of the mailpiece must touch this shaded area and meet the paper thickness requirement.



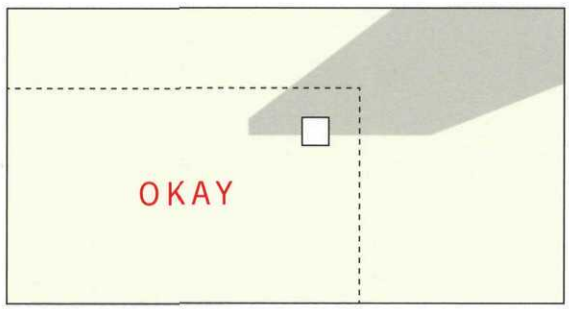
non-machinable letter



non-machinable letter



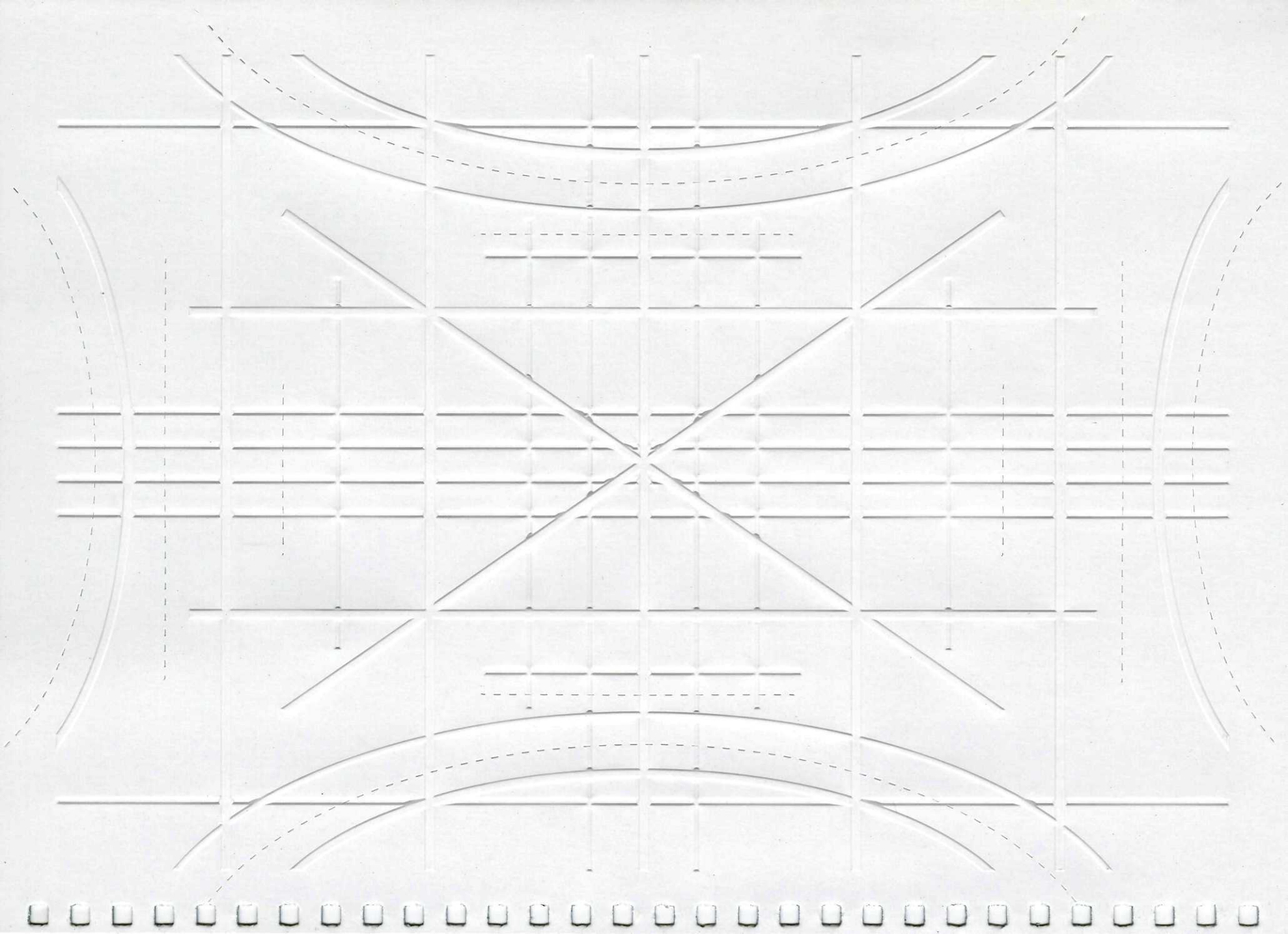
outside letter size requirements



machinable letter

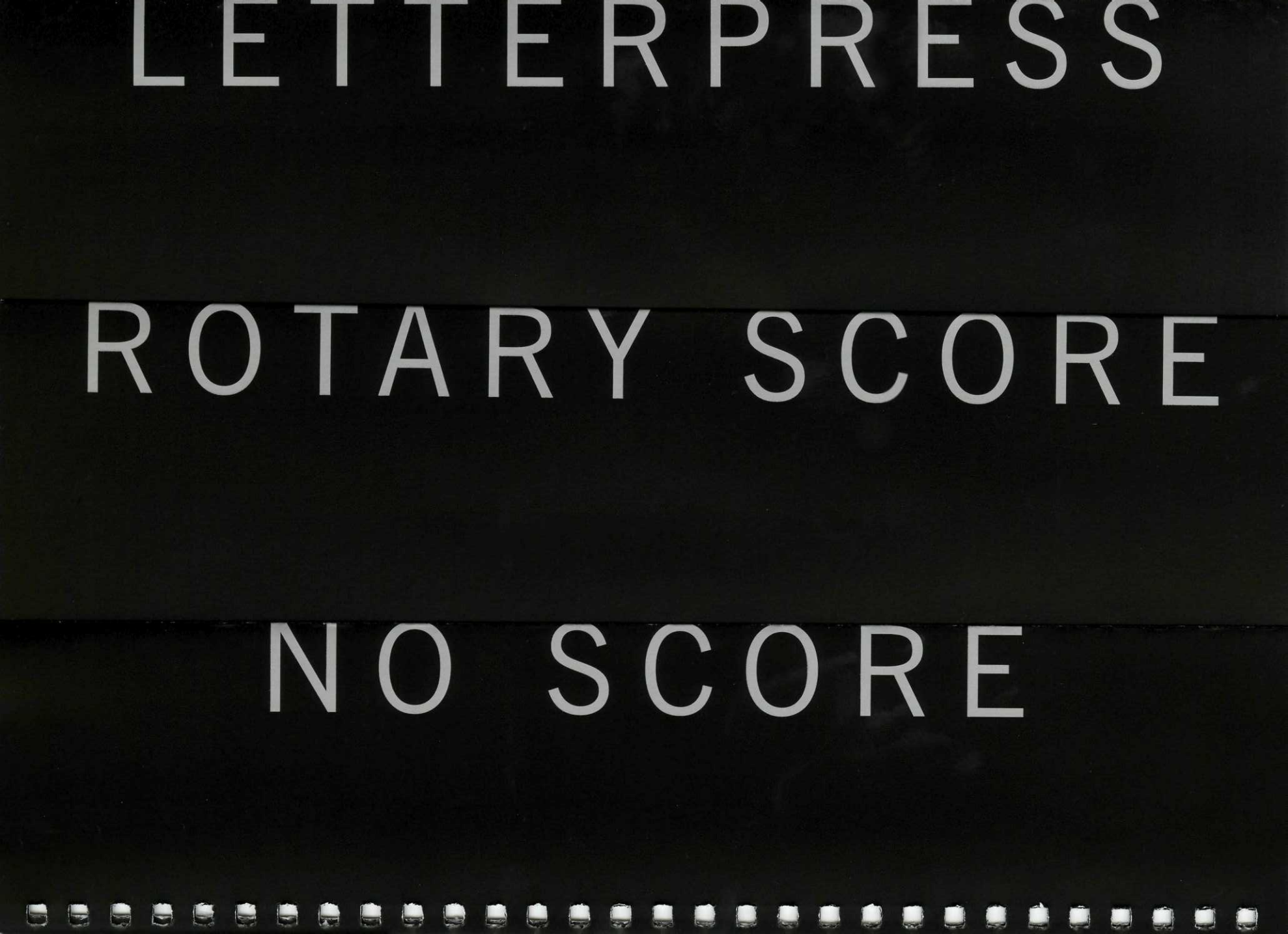
SCORING

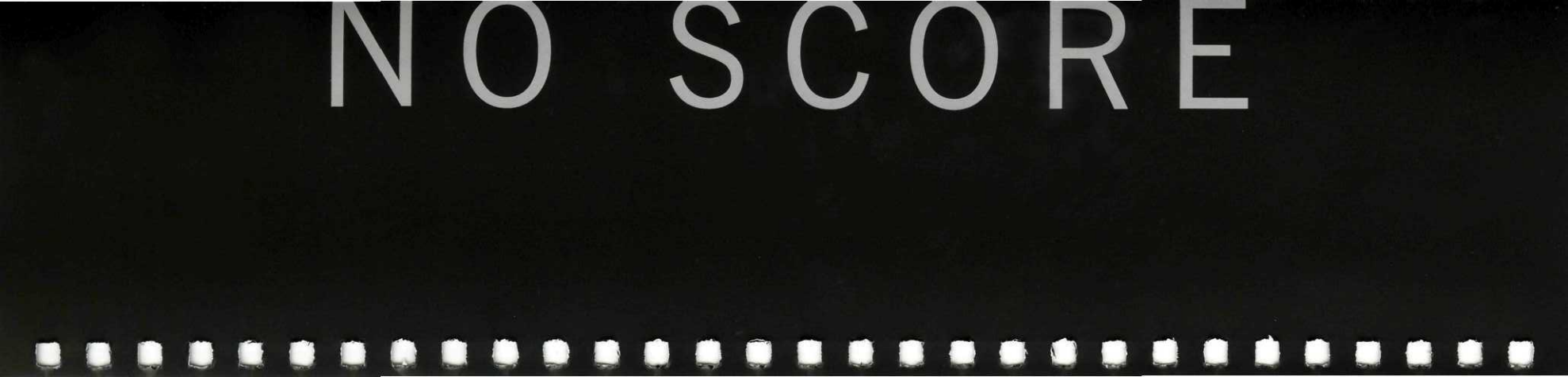
Scoring – the process of creasing the sheet to compress the paper fibers – goes hand-in-hand with folding. Scoring helps to reduce or eliminate cracking of the substrate and precisely mark the placement of a fold. Scoring should be performed on cover-weight and heavy text-weight stock, on areas of heavy ink coverage, and when a fold goes across the grain. Generally, the thicker the paper, the wider the score should be. Typically, the printer or bindery determines the most appropriate scoring method for the job, but it is important for designers to understand the differences so they can discuss options knowledgeably with their printer.



GRAIN DIRECTION

It is a phenomenon of the commercial papermaking process that cellulose fibers align themselves in the same direction. As a result, folds placed parallel to the grain direction are less prone to cracking than folds that go against the grain. This is why binderies prefer to make as many folds as possible with the grain. Folds aligning in different directions, impositions and pressroom efficiencies often dictate folds against the grain, requiring the bindery to plan accordingly. For the highest quality fold, scoring is recommended.


LETTERPRESS
ROTARY SCORE
NO SCORE


NO SCORE

No Score,
Against the Grain

This is the worst-case scenario – an unscored fold made against the grain on a heavy-weight coated sheet that is printed using dark and heavy ink coverage. Folding is very stressful for paper, and without first compressing fibers by scoring, the fold will show visible cracking and roughness. Scoring is advised unless the job is being printed on light-weight paper that has minimal ink coverage across the fold area.

ROTARY SCORE

Rotary Score

The rotary method uses a scoring wheel to create a crease inline as the sheet passes through the folding or scoring machinery. Like litho scoring (a process done inline on a lithographic press with a steel rule adhered to a mylar sheet and taped to an impression cylinder), rotary scoring is another technique used to define a fold and reduce cracking. In general, rotary has fewer production shortcomings than litho scoring and provides a deeper crease, but not quite as deep as a letterpress score. On the other hand, the rotary process runs faster than letterpress, thus offering both time and cost advantages.

Letterpress Score

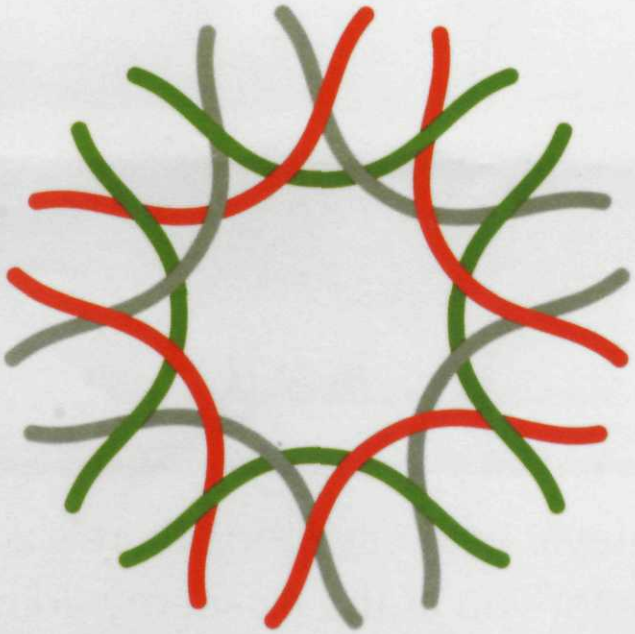
Letterpress scoring is recognized for producing the highest quality fold. It also costs more than other scoring methods. Letterpress scoring is an offline process in which a steel rule is formed into the desired shape and set within a piece of wood (called "furniture") that is locked in a metal frame. The frame is clamped into a letterpress machine that forces the paper between the steel rule and the impression of the press. The result is an accurate, high-quality score that prevents most cracking.

LETTERPRESS

IN USE

Except for postcards, virtually every printed piece requires some type of fold. The fold can be chosen in a perfunctory manner based on how much information the piece needs to contain. Or it can be explored as a design strategy to make the message more persuasive, compelling, understandable, unique or fun. This section presents six different ways that companies and institutions used folding to make their printed piece more memorable.

CALIFORNIA ACADEMY OF **SCIENCES**

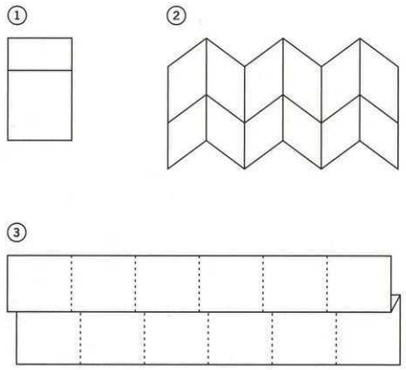


ILLUSTRATING AN IDEA

A fold can be a way to illustrate an idea. It can serve as a storytelling device that gives designers the ability to control the "reveal," letting readers take in the first level of information before lifting the fold to move deeper into the story. The fold itself becomes an integral part of the narrative, reinforcing in a tactile way what is stated in words and images.

California Academy of Sciences Promotion

The fold for this promotion for the new California Academy of Sciences in San Francisco's Golden Gate Park was inspired by the way architect Renzo Piano thought of his design. He envisioned a structure that blended into the surrounding park by creating a plant-covered "living roof" that appeared as if a section of the landscape had been lifted up so the museum could be slid underneath. The building itself, which allows visitors to see through it to the other side of the park, is meant to enhance the feeling of discovery and being one with the natural environment. The brochure, too, encouraged readers to "lift the roof" to view the wonders inside.



The piece was scored and hand folded by a specialty bindery.

This is a double-sided brochure created out of six accordion-fold panels with an additional short, horizontal accordion fold that stretches the length of the piece. On one side, when readers unfolded the accordion-fold panels, they saw an expansive view of the exterior of the museum with its green hilly roofline.

Lifting up the top half of the brochure revealed photographs and text that explained the many attractions that visitors would find inside. On the reverse side, the same horizontal fold pulled down, doubling the number of stories of people and creatures that visitors would meet at Cal Academy.

Emma
2120 8th Avenue South
Nashville, Tennessee 37204
www.myemma.com

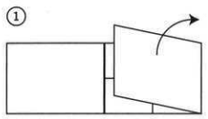
ENGAGING SELF-MAILERS

Self-mailers are the workhorse of direct mail marketing because they are typically less expensive to assemble and mail, and they can be folded in ways to include tear-off coupons and order forms. They can be as simple as a postcard and as elaborate as a complex folding style. But self-mailers need to grab the attention of recipients quickly and make it evident within seconds that the content is worthy of a closer look. Creative folds and die-cuts offer a means to engage the reader.

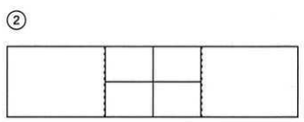
Emma Self-Mailer Promotion

Emma, a Web-based service helping organizations communicate in style, created a 5" x 7" direct mail marketing campaign to talk to prospective customers, but did so in a way that captured the open, conversational style of the service. A "talk bubble" for the recipient's address set the conversational tone, and they continued the "talk bubble" theme inside with line-drawn characters asking advice for common problems. The questions presented on colorful die-cut flaps were a friendly departure from the usual Q&A format and enticed readers to lift the flap to learn what Emma had to say.

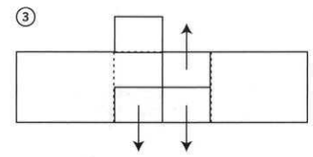
The opening fold states the purpose of the piece with a tongue-in-cheek diagram of how to use it.



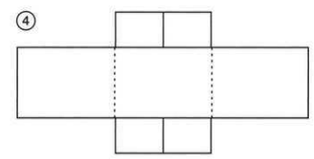
The full triptych exposes four closed folds, each one posing a customer's frequently asked question.

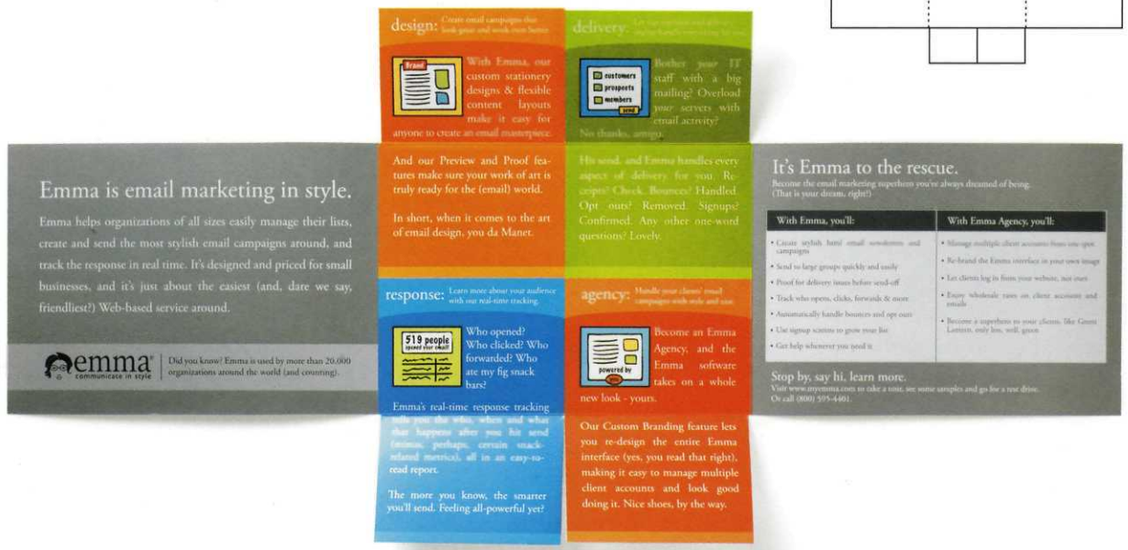


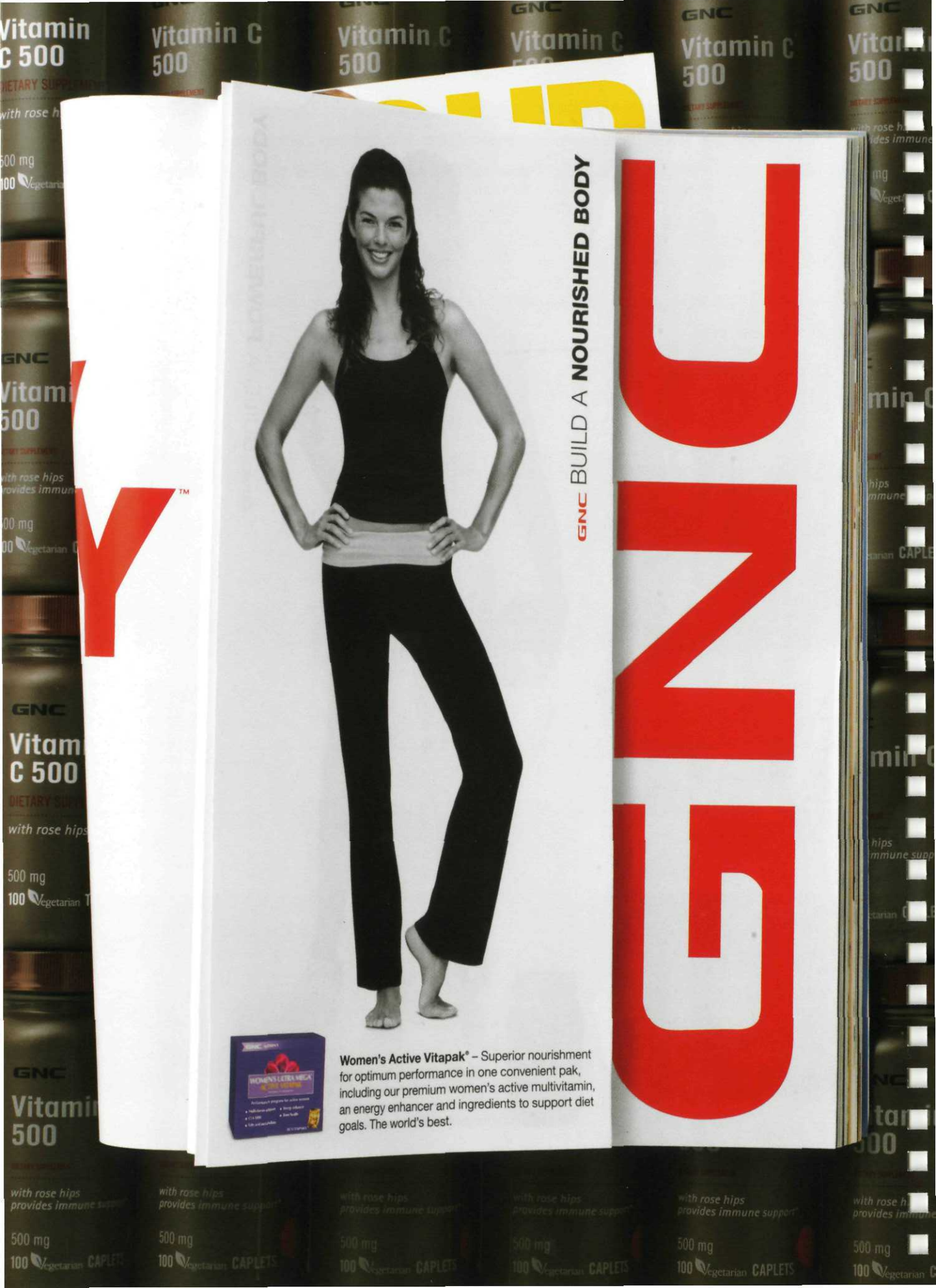
Flaps lift individually to reveal the answer.



With all flaps open, recipients can read Emma's benefits at a glance.






GNC BUILD A NOURISHED BODY
Women's Active Vitapak® – Superior nourishment for optimum performance in one convenient pak, including our premium women's active multivitamin, an energy enhancer and ingredients to support diet goals. The world's best.
GNC

EFFECTIVE AD INSERTS

Inserts in publications give brands greater control over their design and printing options, including choice of paper, than run-of-press ads. Companies try to make such premium ad buys count by incorporating dimensional qualities such as creative folds, die-cuts, tip-ins, perforated coupons and reply cards, and sometimes even a sample of the product. Surveys show it works; readers spend about 10 times longer on an insert than a regular ad.

GNC Ad Insert

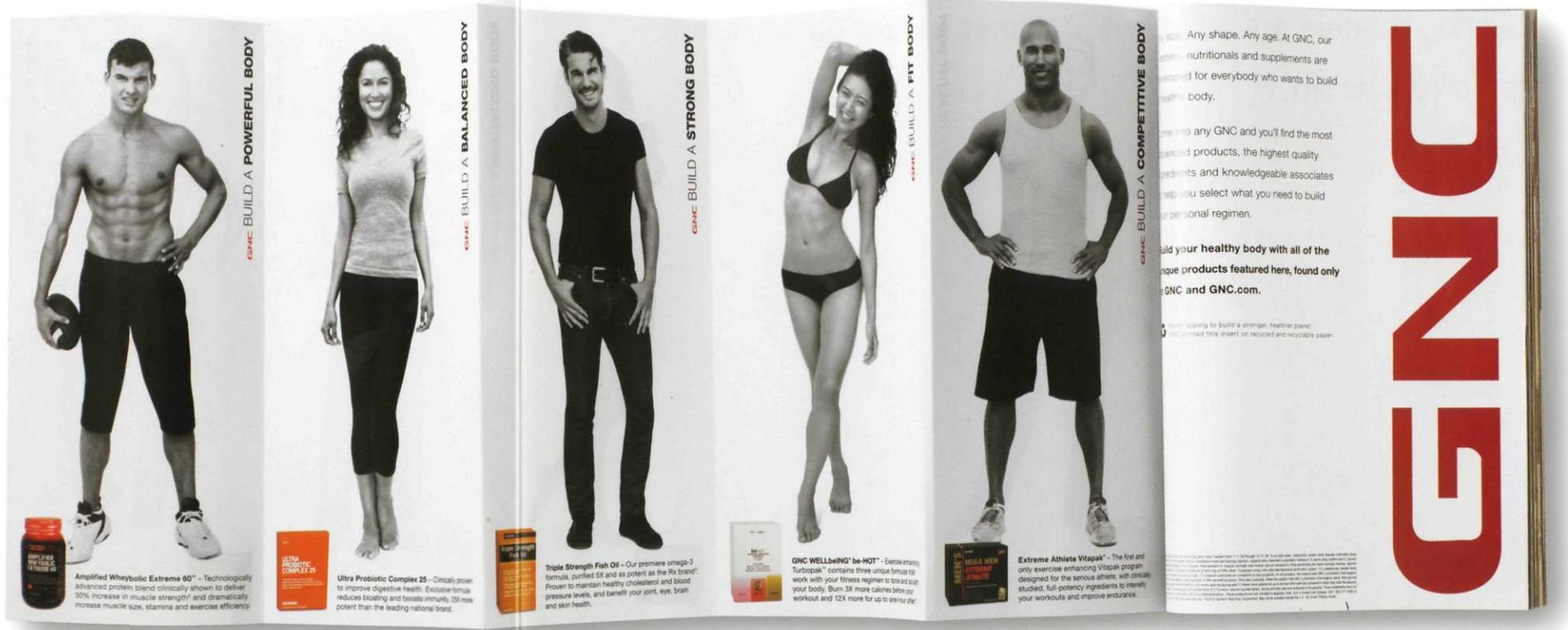
GNC, the largest specialty retailer of vitamins, minerals and sports nutrition supplements, wanted to reach a broader audience. Arnell, their agency, created this ad insert to expand the definition of "body building" to include anyone who wants to build a strong, healthy, fit, energized, lean or balanced body. Accordion-fold panels showcased people in various life stages with the products that meet their individual needs. The dramatic way the insert unfolded helped to give the message greater impact and grab the attention of potential new customers. The insert was designed as a separate piece and preprinted on heavier coated stock before being sent on to the magazine's bindery. To ensure that the folds stayed closed during the bindery process, a tab held the panels together and was cut off in the final trim of the magazine.

①

②

③

Full height but a half-page wide, the accordion-fold ad insert essentially gave GNC ten extra "pages" to pair customer needs with specific nutritional products. The accordion-fold panels were inserted between the opening and closing text pages of the ad, which were printed run-of-press.



2
CENTRE DE PARIS
LES SITES MAJEURS
Musée de l'Armée
Musée de l'Homme
Musée de l'Orangerie
Musée des Arts et Métiers
Musée d'Orsay
Musée du Louvre
Musée National du Moyen Age
Musée Rodin
Ile de la Cité
Ile Saint-Louis
Jardin des Tuileries
La Conciergerie
Notre-Dame (Cathédrale)
Opéra Garnier
CHAILLOT
OPERA
LES HALLES
ST-GERMAIN
ÎLE DE LA CITÉ
ÎLE ST-LOUIS
INVALIDES
MONTPARNASSE
Seine
Parc du Champ de Mars
Jardin des Tuileries
Jardin du Palais Royal
Esplanade des Invalides
LEGENDE

ENGINEERING MARVELS

To think of proprietary specialty folds as another bindery process is to not give them their due. They represent advances in engineering and technology that are so unique the developer is granted patent protection for the design. Such innovative folds have spawned exciting new consumer products, and have inspired others to push the boundaries of print and marketing communications.

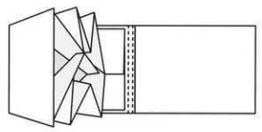
PopOut® Map Retail Product

PopOut® Maps are an example of the fold representing the key feature of the branded product. It offers an ingenious self-folding design. When the laminated gate fold cover is open, the map immediately pops out to an 8⅜" x 9¾" size, and simply closing the cover causes it to refold itself automatically into a convenient 5⅛" x 3⅜" pocket-size. Anyone who has tried to wrestle a large map back to its original form appreciates this amazing design. PopOut® handles custom orders for clients ranging from municipalities and hotels to restaurants and corporations. A popular premium for trade shows, conventions, events and mailings, PopOut® products can open up to everything from convention seating charts to a photo of the latest model car.

Closed cover.

Gate fold map on coated card stock.

②



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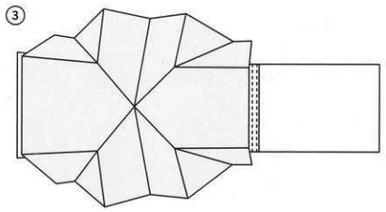

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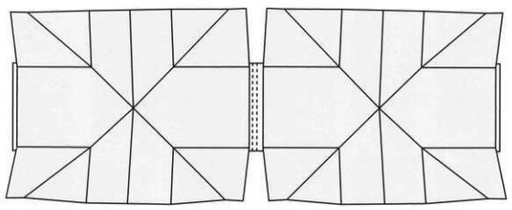
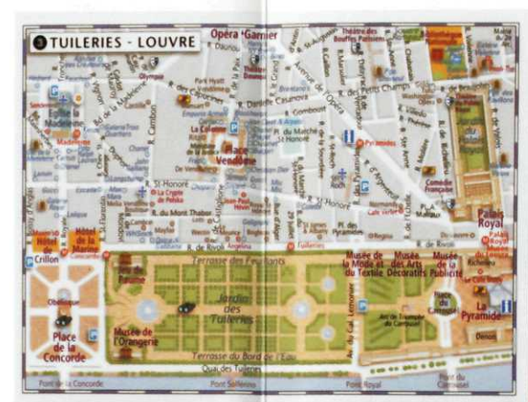
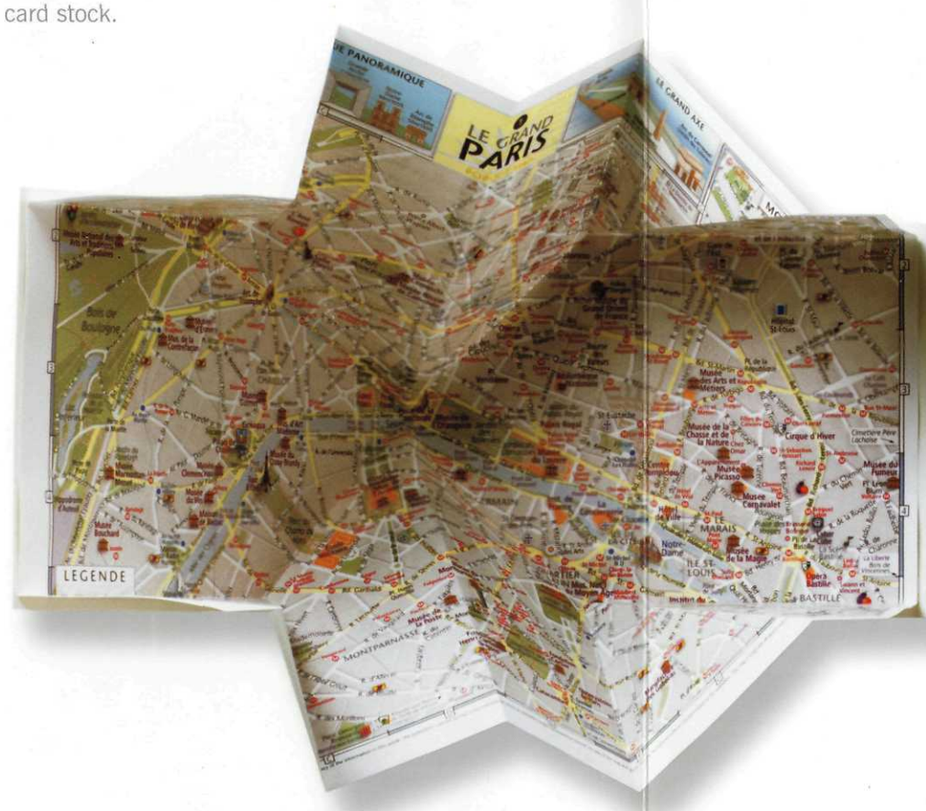




The inside panel of the coated cover offers an opportunity to present additional information.



Maps are all hand-folded and hand-assembled.

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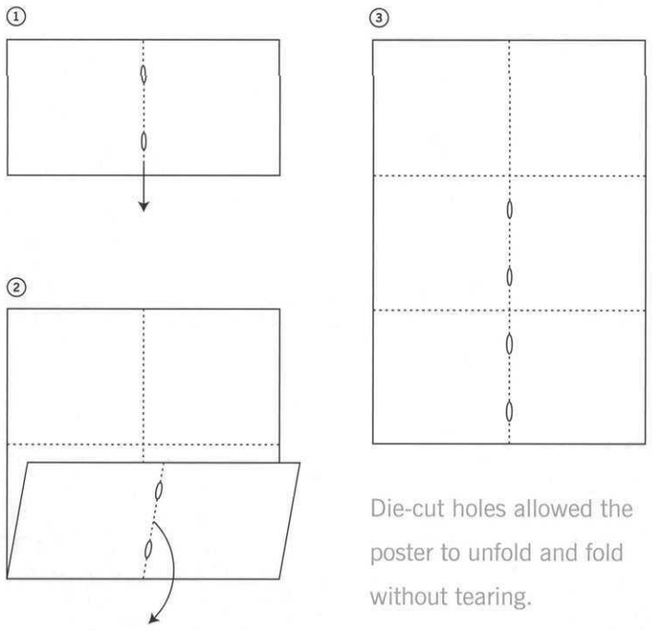
PRODUCT DEMONSTRATION

Product brochures have many ways to distinguish themselves from their competition – distinctive proportions, unique materials, dramatic colors, exotic folds – can all contribute to a product's message. Certainly one of the most effective methods of promotion is the inclusion of an actual product demonstration inherent in the brochure itself.

Heidelberg Product Brochure

Heidelberg, manufacturer of many of the world's most advanced printing systems, showed the capabilities of its new finishing equipment by turning the promotional brochure into a product demonstration. In addition to page after page of lavish full-bleed photographs of its finishing line, Heidelberg demonstrated an innovative way to incorporate a 12-page vertical poster of its saddlestitcher into the middle of the book. Intended to remain part of the book rather than be removed, the poster was first die-cut with holes where the stitches would be before it was bound into the book. The strategically placed holes let readers unfurl the poster without tearing it open and to refold it neatly back into place. The brochure also featured an 8-page gate fold spread that displayed the full expanse of the finishing line from one end to the other.



Die-cut holes allowed the poster to unfold and fold without tearing.

View when poster is closed.

View when first fold is opened.

Full view of poster when all panels are unfolded.

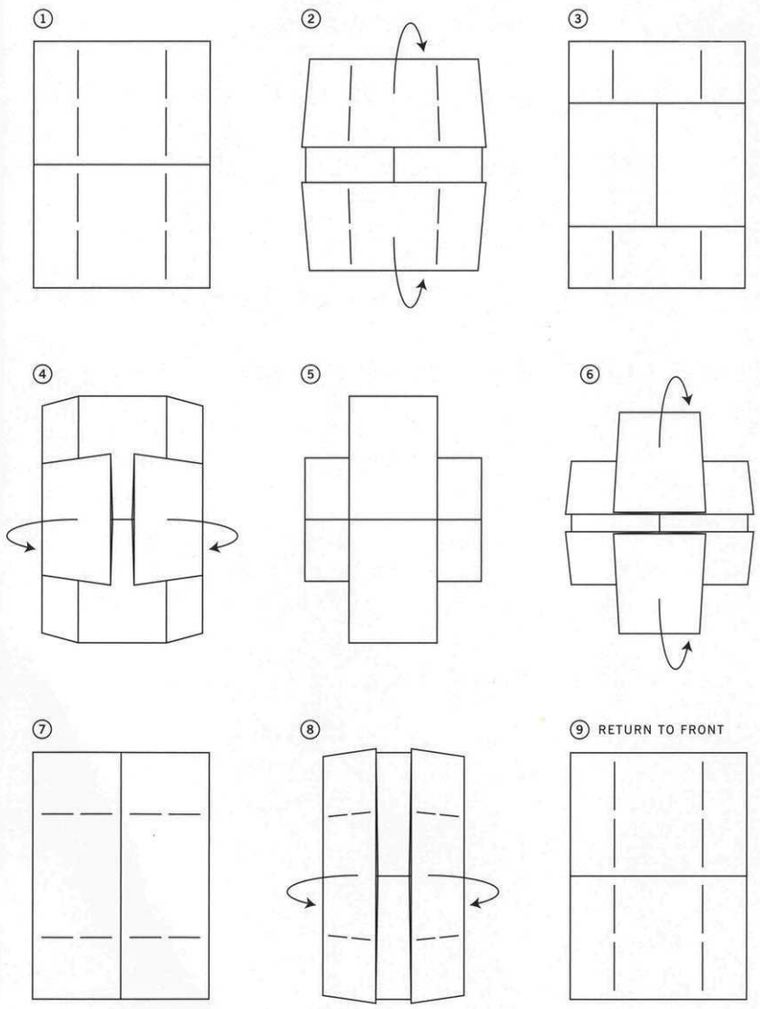
Topps
ICHIRO
51
OPENING DAY
2008
ICHIRO
SEATTLE MARINERS™

ADDING VALUE

Printed pieces that start as items of passing interest can become objects that people want to collect and keep if they have attributes that add to their perceived value. This goes beyond their informational and visual content. Sometimes the physical construction of the piece itself fascinates and entertains and makes holders return to them again and again the way they would a favorite possession.

Topps© Flapper® Baseball Premium

This fold, called the Flapper®, is patented by Structural Graphics and used for a wide variety of products, including Topps sports collectible card sets. The beauty of the Flapper® is that it creates a user experience that starts with one layout and then reveals another and another until the recipient arrives back at the original layout, feeling compelled to cycle through them all over again. It's so intriguing that it is hard to put down. Typically, the Flapper® style is assembled by hand in the tens of thousands, and automated on folder/gluer machines or inline on web presses in the hundreds of thousands and millions of units.



Front cover.

Open top and bottom for the second time.

Open top and bottom.

Final information panel.

Open left and right.

Open left and right to reveal the front cover again.

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DO'S AND DON'TS

This section could be called "best practices" and "common mistakes" because it is not about folding styles but about questions that designers should ask when thinking about folding and steps that often get overlooked when preparing files for print. They are offered up here by different experts in the field and often learned the hard way through personal experience. Perhaps the most important bit of advice is to talk to your printer early, often and throughout the project. That will likely save you time, money and frustration along the way.

GRRR
GRRR
TNT

Do's

1.

Talk to your printer. It is important to talk to your printer about folding during the initial planning phase and after you have finalized your design. They can help you estimate the job, discuss the nuances of machine and hand folding, and suggest ways that you can refine costs. Once you have settled on a design direction, have your printer review your comps again and provide you with a folding dummy on the actual paper stock. What may seem like a minor change to you may, for instance, change a machine-folded job to a hand-folded one. Your printer can head off situations that could cause major headaches or bust budgets if learned too late in the production process.

2.

Create a folding dummy. Don't just describe the fold you want to the printer, show it. Create a mock-up. Then, lay it out flat and pay close attention to the folding sequence. (See Basics and Examples sections for visualization.) What needs to be communicated to the printer is which panels will meet, and in what order. Your mock-up will guide the printer in preparing a folding dummy on the actual paper stock and give the bindery a real sample to plan production and estimate the job.

3.

Choose a fold that suits your story. Before picking a particular folding style, ask yourself how it will help tell your story or serve your purpose. Will a short fold provide a great spot to place a teaser headline that opens up to reveal the marketing message? Will an oversized gate fold allow you to dazzle readers through sheer breathtaking scale or make a complex schematic readable by letting it run across four

panels? Will smart planning on a call for entries poster folded into quarters allow the piece to become a self-mailer, with individual panels to list the rules and to place an entry form? Will a fascinating "exotic" fold make for a wildly successful and memorable marketing campaign?

4.

Ask about the quantity. If your client wants tens of thousands of copies of a tricky folding style, with some research you may be able to locate a specialty bindery that can machine-fold it, saving time and money. Some folds also cannot be easily auto-inserted into envelopes or be sent as a self-mailer. A square format piece may meet letter sizing requirements but will still be subject to a surcharge for non-machinability. Knowing how many copies will be run may limit or expand your folding choices.

5.

Consider the delivery method. Be sure to ask your client how the piece will be distributed. Your choice of folding style may be determined by the need to fit in a special display holder at a trade show or in a retail environment. Or to be mailed in an

envelope with other marketing materials. Or the need to make it a self-mailer. Or serve as an ad insert in a magazine. Each places different restrictions on what you can do.

6.

Think about order of information. Every folding style has a certain viewing order or a natural way the viewer is inclined to unfold and read the piece. The viewing order may not be what you assume is logical or expected. For example, a roll fold often is "rolled-out" immediately by the viewer, so if you have critical information on the inside right fold-in panel, or a story that must be read continuously, it may be overlooked. To test the effectiveness of your layout, print it out and mock it up, and give it to several people and see how they experience the brochure. Do they read it in the order they're supposed to? Do they miss the message entirely?

A little testing can make all the difference in whether your folded piece communicates your message.

7.

Print it out and fold it down. Keep in mind that what makes sense and looks great flat may not work as well when folded. Test out how the finished piece will look by creating a template with fold marks, printing it out and folding it down. Make sure the piece folds correctly before going too far with the layout. When your layout is developed, repeat the process to make sure the art placement aligns with the folds as intended.

8.

Give your client a real folded sample. It's fine to show your client a thumbnail sketch of how the folds will work or send a .pdf of the layouts, but to avoid misunderstandings later on, be sure to give them a hard-copy sample that they can hold in their hands and check how it opens and presents information.

9.

Look carefully at folded printer proofs. Even though digital proofs and bluelines are usually hand-folded, they should be correct. If it doesn't fold right in proof form, it is unlikely to be correct when the piece is produced. Be sure to indicate any critical color breaks at the folds or concerns about the amount of trim for a fold-in panel. Also, reiterate the correct folding sequence so there is no confusion among bindery operators. For complicated folds or large quantity jobs, it is also a good idea to do a bindery check.

10.

Use a template (or ask for one). If the idea of manually calculating folding compensation for your projects gets you down, use a template. A folding template should be a production-ready file that is set up to the proper trim size, with fold marks and guides already placed in the file. You can ask your printer to provide one, or you can download templates from an online template service such as foldfactory.com.

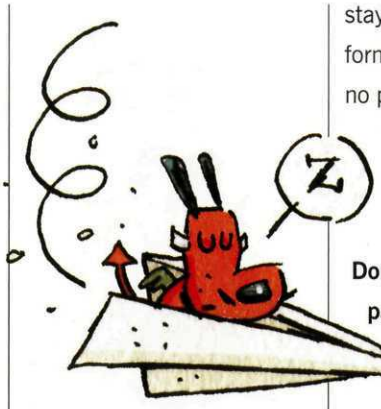
Don'ts

1.

Don't sell the concept before you do your homework. The good news is that your client loved the clever fold; the bad news is that your printer later quotes you a price beyond the budget or tells you that the complexity requires extending the production schedule. At least, get a "ballpark" estimate from your printer and check postal regulations before presenting the concept to your client.

2.

Don't fold on auto-pilot. When it comes to folding, designers frequently get into a rut, falling back on the style that is the easiest and fastest, rather than the one most suited for the project. If you always



choose the same folding style for every job, it's time to consider other options.

3.

Don't ignore postal regulations. With the postal service, close isn't good enough, and the stakes are high. If you are designing a folded piece that will go through the mail, pay close attention to address placement and direction, fold placement, aspect ratio, weight and thickness, and make every effort to stay within standard postal formats unless budget is no problem.

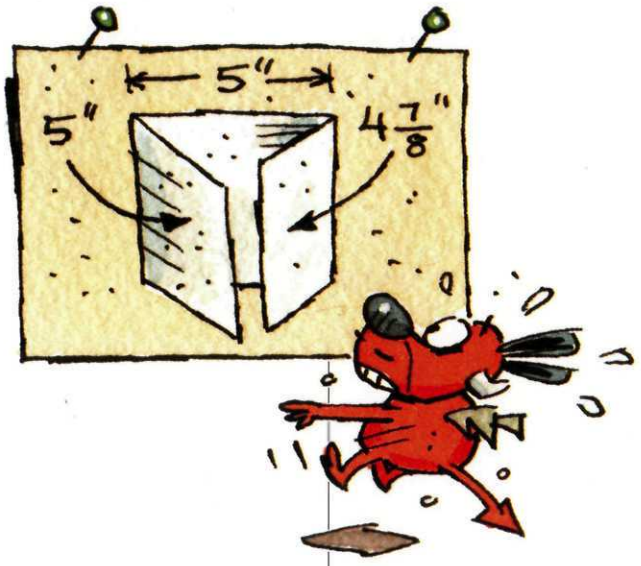
4.

Don't forget to ask for a paper dummy. Ask your printer or paper rep for a folding dummy made out of the actual stock you plan to use. It's the only way that you can accurately assess

whether the sheet has the weight, bulk and strength to withstand complicated folds or needs to be scored. If the piece will be mailed, be sure to check how it fits into an envelope with other enclosed materials, and then weigh the package to determine postage costs.

5.

Don't forget to check fold placements. It helps to make a quick paper dummy and label the panels (where the cover and back cover are and the fold-in panels, etc.). Lay it out flat and check the orientation. For example, when a gate fold is laid out flat, the right fold-in panel is on the left, and the left is on the right. Looking at the tri-fold, when laid out flat the fold-in panel is situated on the far left on side one, but on the far right on side two. So, the trick is that fold placement reverses for side two of your document and, therefore, the folds don't always align page to page.



6.

Don't forget about folding compensation. Paper is dimensional, and if one panel of a folded brochure is to fold into another, that fold-in panel must be slightly shorter to allow for the thickness of the sheet and for standard process variations in the mechanical folding process. This critical mathematical adjustment must be made to the panels of your folded piece in the digital document, otherwise the margins and color breaks will shift noticeably. If you don't know how to set up the file correctly, ask your printer for assistance or use a template.

7.

Don't rule out scoring. Not all jobs require scoring (placing a crease in the sheet to get a smoother fold), but many do. We score for several reasons, including folding thicker sheets, folding against the grain of the paper, to reduce cracking at the fold across areas of heavy ink coverage, for jobs that require hand-finishing, and for critical fold placement or color breaks at the fold. See what your printer recommends.

8.

Don't expect the printer to read your mind. A digital document of a four-panel folded brochure could be an accordion fold, a gate fold, a double parallel, or a roll fold, among other styles. Tell your printer what folding style you are creating and send a folding dummy.

9.

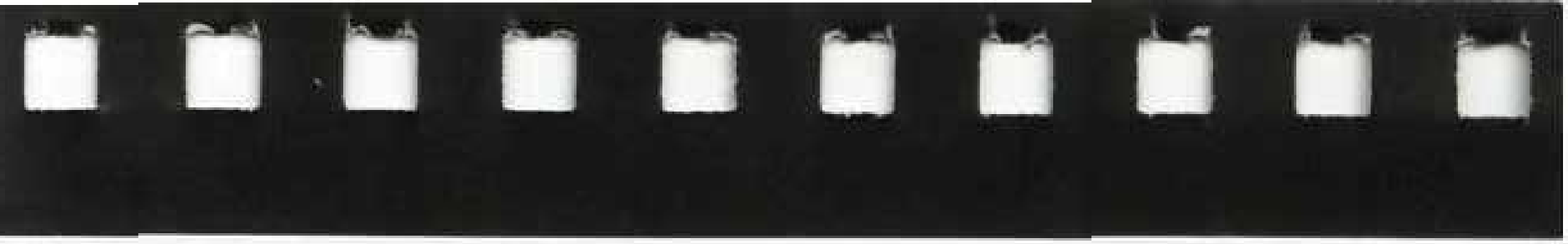
Don't make assumptions about production. Not every post-press process is a separate, offline procedure. In fact, lots of new technologies and techniques have been developed in recent years, offering printers and binderies more efficient ways of executing multiple processes inline and offline. So, before you rule out a die or other process assuming it's out of your budget, ask your printer for an update on their post-press options.

10.

Don't submit a file to the printer without indicating where the folds are. Measure and place the fold guides on the page and put fold marks in the slug area. Also, always build your file to trim size and pull bleeds past the document edge – don't float your design on a larger page with crop marks. Send one, two-page file (if it's a two-sided piece), not two separate files. Remember that fold marks are indicated with a dotted line and crop marks with a solid line.

EXAMPLES

Often the best way to understand how a fold works and to explain it to a client, colleague or printer is by having a physical example that everyone can hold in their hands. Shown here are seven unique folds, from the simplest to the very complex. All but one can be machine-folded with standard bindery equipment. The Exotic example was outsourced to a specialty bindery for hand-folding.



BA

A

The **Basic** folding family (single folds, trifolds, four pagers) consists of the easiest and most commonly used styles, offered by virtually any printer or bindery. The sample shown here is called a tent fold.

GATE

C

Gate folds are generally symmetrical,
with two or more panels folding in toward the center from
opposite sides. This example opens out vertically.

ROLL

C

The **Roll** fold (also called barrel fold) consists of four or more panels that roll in on each other. The roll-in panels must be made incrementally smaller to tuck neatly into their respective panels.

PARALLEL

B

The **Parallel** fold is characterized by panels that run parallel to each other.

This vertical front-opening double parallel consists of two parallel folds – the first folding the sheet in half on the horizontal center, and the second folding it in half again. This particular fold opens downward, rather than out to the side, which is more typical.

EXOTIC

The **Exotic** family consists
of challenging folds, including
proprietary configurations, that
may require hand folding or
the services of a specialty bindery
that can automate the process.
A twist fold is shown here.

POSTER

C

The **Poster** style features combination folds that open out into a large poster format. The first fold serves as the base fold and the final fold gives it its finished format. Here, a letter fold forms the base and an accordion fold gives it its finished look.

ACCORDION

D

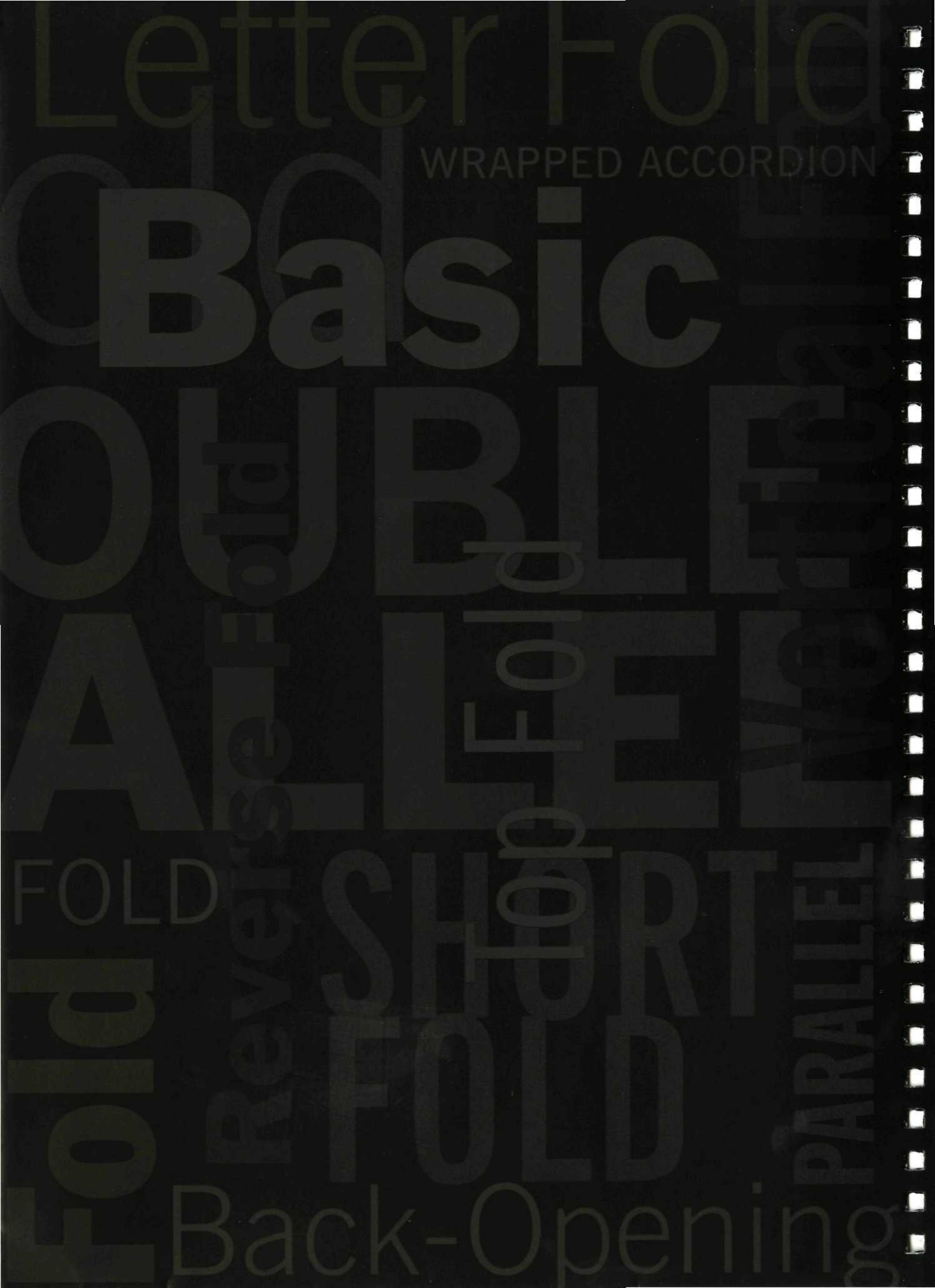
Accordion folds get their name because each fold is in the opposite direction of the previous one, creating a zig-zag or pleated effect. This example uses successively narrower panels giving it a stepped appearance.

FOLDING AT A GLANCE

The wall-size poster in the pocket opposite presents a sampling of interesting folding styles that are possible, with each ranked in terms of complexity: 1– easy; 2 – moderate makeready, slower speed; 3 – requires long and difficult makeready, special skills and/or machinery, and Specialty – requires hand folding or specialty bindery. The fold used for the poster itself is a double parallel into a letter fold. Also, to demonstrate how a pocket can be created without glue, the folder for the poster is made from an eight-page broadside, with one panel folded on the diagonal.

GU

SAPP


Letter Fold
WRAPPED ACCORDION
Basic
DOUBLE
ACCORDION
Fold
FOLD
SHORT
FOLD
PARALLEL
Back-Opening

SAPPI PORTFOLIO OF PAPERS

Sappi has a perfect match for all of your printing needs. Just check out the handy table below to find the grade that suits your project in the weights and finishes you want. Sappi papers all contain post consumer recycled waste and are manufactured with sustainability in mind, with third-party certification from respected environmental rating services, including SFI®, FSC and Green-e®. Swatchbooks and printed samples are readily available from Sappi sales representatives and your local paper merchant. Or you can call 1.877.Sappi.Help to ask a Sappi technical expert about folding and scoring on Sappi papers or any other print-related questions. You can also learn about Sappi programs at sappi.com/na.

PRODUCT			TEXT	COVER	PCW	CERTIFICATION
PREMIUM						
MCCOY	**Sheet**	**Gloss**	**80, 100**	**80, 100, 120**	**⊙10%**	**SFI®, FSC and Green-e® certified**
		Silk	**80, 100**	**80, 100, 120, 130**	**(all finishes)**	**(all finishes)**
		Matte	**80, 100**	**65, 80, 100**		
	Web	Gloss	80, 100	80	⊙10%	SFI®, FSC and Green-e® certified
		Silk	80, 100	80	(all finishes)	(all finishes)
		Matte	80, 100	65, 80	(all finishes)	(all finishes)
PERFORMANCE						
OPUS	**Sheet**	**Gloss**	**70, 80, 100**	**65, 80, 100, 120**	**⊙10%**	**SFI®, FSC and Green-e® certified**
		Dull	**70, 80, 100**	**65, 80, 100, 120**	**(all finishes)**	**(all finishes)**
		Matte	**60, 70, 80, 100**	**65/7pt**		
	Web	Gloss	60, 70, 80, 90, 100	65, 80	⊙10%[1]	SFI®, FSC (all finishes)
		Satin	60, 70, 80		(all finishes)	
		Dull	60, 70, 80, 100	65, 80		
		Matte	60, 70, 80, 100	65/7pt		
	Web with PCW	same offerings	same offerings	same offerings	⊙10%[1]	
OPUS 30	**Sheet**	**Gloss**	**70, 80, 100**	**65, 80, 100, 120**	**⊙30%[2]**	**SFI®, FSC and Green-e® certified**
		Dull	**70, 80, 100**	**65, 80, 100, 120**	**⊙30%[2]**	
		Matte	**60, 70, 80, 100**	**65/7pt**	**⊙30%**	
	Web	Gloss	70, 80, 100	65, 80	⊙30%	SFI®, FSC and Green-e® certified
		Dull	70, 80, 100	65, 80	(all finishes)	(all finishes)
		Matte	60, 70, 80, 100	65/7pt		
OPUS PS	**Sheet**	**Gloss**		**70/7pt, 85/9pt**	**⊙10%**	**SFI®, FSC and Green-e® certified**
		Matte	**105/7pt**	**80/9pt**		
	Web	Gloss		70/7pt, 78/8pt, 85/9pt	⊙10%[1]	SFI®, FSC (all finishes)
		Matte	105/7pt	80/9pt	(all finishes)	
	Web with PCW	same offerings	same offerings	same offerings	⊙10%[1]	
SOMERSET	Web	Gloss	43, 45, 50, 55, 60, 70, 80, 90, 100	80/7pt	⊙10%[3]	SFI®, FSC[4] (all finishes)
		Satin	45, 50, 60, 70, 80, 100		(all finishes)	
		Matte	45, 50, 60, 70, 80, 100, 105/7pt	65/7pt, 80/9pt		
	Web with PCW	same offerings	same offerings	same offerings	⊙10%[3]	
ECONOMY						
FLO	**Sheet**	**Gloss**	**60, 70, 80, 100**	**80/7pt, 100/9pt**	**⊙10%**	**SFI®, FSC and Green-e® certified**
		Dull	**70, 80, 100**	**80/7pt, 100/9pt**		**(all finishes)**
		Matte	**60, 70, 80, 100, 110/7pt**	**80/9pt**		
	Web	Gloss	38, 40, 43, 45, 50, 60, 70		⊙10%[3]	SFI® (all finishes)
		Matte	40, 45, 50		(all finishes)	
	Web with PCW	same offerings	same offerings	same offerings	⊙10%[3]	

Sappi Global brands include Galerie Publishing Papers, Galerie Art, HannoArt, Magno and EuroArtPlus. Please consult your sales or customer service representative for more information.

1 Opus web and Opus PS web is available with 10% PCW upon request.

2 120lb cover contains a minimum of 20% PCW.

3 Somerset and Flo web (except for text weights 40lb and below) are available with 10% PCW upon request.

4 Limited quantity available. Consult your Sappi representative.

FOLDING RESOURCE: FOLDFACTORY

Content in this issue of The Standard is excerpted from *FOLD: The Professional's Guide to Folding* by Trish Witkowski, Chief Folding Fanatic at foldfactory.com. Foldfactory, the only online folding resource for graphic arts professionals, offers folding tips, tools, custom templates, resources and endless inspiration. For useful links to folding and scoring resources, videos and additional information about topics addressed in this publication, please visit foldfactory.com.

Join foldfactory's free, educational community to start receiving the "60-second Super-cool FOLD of the WEEK." Send in your creative folding samples, and if your fold is featured in the "Ideas" section of the site or as "FOLD of the WEEK," foldfactory will send you a free gift.

Send your samples to:
Network PDF – FOLDRite Division
Attn: Folding samples
3212 West End, Suite 500
Nashville, TN 37203

About Trish Witkowski:

Trish Witkowski is Chief Folding Fanatic at the online community foldfactory.com. She holds a bachelor of fine arts degree in graphic design and a master of science degree in Graphic Arts Publishing from RIT. An award-winning designer, she held the position of creative director for a Baltimore-based agency for six years, and has taught design and desktop publishing at the college level. Trish has a specialized expertise in the area of folding and is the creator of the FOLDRite™ system, and the template-building software plug-in FOLDRite Template Master. Trish frequently writes and blogs on the topic of folding and finishing and hosts a popular weekly e-video, the "60-second Super-cool FOLD of the WEEK." She has written three books on the topic of folding: *A Field Guide to Folding, Folding for the Graphic Arts: A Teacher's Handbook,* and *FOLD: The Professional's Guide to Folding.*

PRODUCTION NOTES & CREDITS

Binding

Wire-O

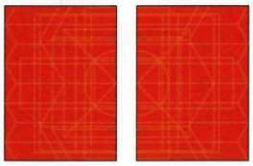
Aqueous Coating

All pages have overall inline satin aqueous coating, except as noted.

Cover

Paper: Opus Dull Cover 120lb/325gsm

Four-color process + match blue.



Inside Front and Back Covers

Paper: Opus Dull Cover 120lb/325gsm

Two hits match red + match yellow + black.

Pages 1-3 Introduction

Paper: Opus Dull Text 100lb/148gsm

Black + match yellow.

Page 4 Folding Basics

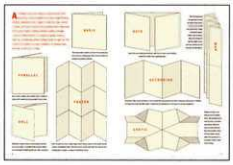
Paper: Opus Dull Text 100lb/148gsm

Two hits black + match gray.

Page 5 Basic Folding 101

Paper: Opus Dull Text 100lb/148gsm

Stepped accordion fold. Four-color process. Reverse side prints two hits match yellow.



Pages 6-11 Folding Basics

Paper: Opus Dull Text 100lb/148gsm

Black + match red + match yellow.

Glossary of Folding and Scoring Terms

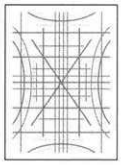
Paper: Opus Dull Text 100lb/148gsm

Roll fold. Black + match red + two hits match yellow.

Page 12 Scoring

Paper: Opus Dull Text 100lb/148gsm

Black + two hits match silver.



Page 13 Scoring Interpretation

Paper: Opus Dull Cover 80lb/216gsm

Emboss + deboss + die perforation in two passes. First pass: die perforation using 8 tpi on a Bobst 104. Second pass: emboss and deboss using a brass die Bobst 102 BMA.

Page 14 Grain Direction

Paper: Opus Dull Cover 80lb/216gsm

Two hits black + match silver.

Page 15 No Score

Paper: Opus Dull Cover 80lb/216gsm

Two hits black + match silver. Reverse side prints two hits black + match gray.

Page 17 Rotary Score

Paper: Opus Dull Cover 80lb/216gsm

Two hits black + match silver. Reverse side prints two hits black + match gray. Rotary scored on a MBO folder.

Page 19 Letterpress Score

Paper: Opus Dull Cover 80lb/216gsm

Two hits black + match silver + match gray. Letterpress scored using 2 pt. score rules on a Bobst 104.

Page 20 In Use

Paper: Opus Dull Cover 80lb/216gsm

Two hits match blue.

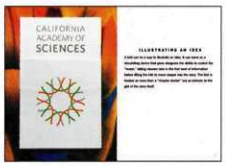
Page 21 In Use

Paper: Opus Dull Cover 80lb/216gsm

Feather photography:

Michael Durham/Minden Pictures.

Four-color process. Die cut on a Bobst 104.



Pages 22-23 California Academy of Sciences

Paper: Opus Dull Cover 80lb/216gsm and Text 100lb/148gsm

Four-color process.

California Academy of Sciences Foldout

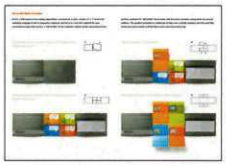
Paper: Opus Dull Text 100lb/148gsm

Four-color process + match red + match gray.

Pages 24-25 Emma

Paper: Opus Dull Text 100lb/148gsm

Four-color process.



Emma Foldout

Paper: Opus Dull Text 100lb/148gsm

Four-color process + match red + match gray.

Pages 26-27 GNC

Paper: Opus Dull Text 100lb/148gsm

Four-color process.

GNC Foldout

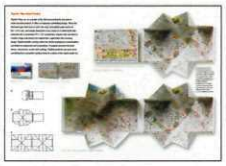
Paper: Opus Dull Text 100lb/148gsm

Four-color process + match red + match gray.

Pages 28-29 PopOut®

Paper: Opus Dull Text 100lb/148gsm

Four-color process.



PopOut® Foldout

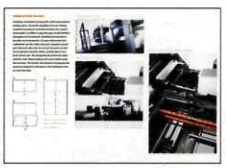
Paper: Opus Dull Text 100lb/148gsm

Four-color process + match red + match gray.

Pages 30-31 Heidelberg

Paper: Opus Dull Text 100lb/148gsm

Four-color process.



Heidelberg Foldout

Paper: Opus Dull Text 100lb/148gsm

Four-color process + match red + match gray.

Pages 32-33 Topps® Flapper® Baseball Premium

Paper: Opus Dull Text 100lb/148gsm

Four-color process.

Topps® Flapper®
Baseball Premium Foldout

Paper: Opus Dull Text 100lb/148gsm
Four-color process + match red +
match gray.

Page 34 Do's & Don'ts

Paper: Opus Dull Text 100lb/148gsm
Black + two hits match tan.

Page 35 Do's & Don'ts

Paper: Opus Dull Text 100lb/148gsm
Illustration: Elwood Smith.
Accordion Z-fold. Four-color process.
Reverse side prints two hits match tan.

Pages 36-37 Do's

Paper: Opus Dull Text 100lb/148gsm
Illustration: Elwood Smith.
Four-color process + match gray.

Pages 38-39 Don'ts

Paper: Opus Dull Text 100lb/148gsm
Illustration: Elwood Smith.
Four-color process + match gray.

Page 40 Examples

Paper: Opus Dull Text 100lb/148gsm
Black + match red.

Folded Examples

Paper: Opus Dull Text 80lb/118gsm
Two hits black + match gray.

Folding at a Glance

Paper: Opus Dull Text 80lb/118gsm
Two hits black + match gray.

Sappi Folding Guide

Paper: Opus Web Matte Text 60lb/89gsm
Two hits black + two hits silver + overall
satin varnish.

Guide to Folding Types

Paper: Opus Web Matte Text 60lb/89gsm
Black + six fluorescent match colors +
overall satin varnish.

Folder

Paper: Opus Dull Text 100lb/148gsm
Two hits black + three match grays.

Page 43

Paper: Opus Dull Text 100lb/148gsm
Black + match red.

Pages 44-48

Paper: Opus Dull Text 100lb/148gsm
Four-color process + match red.

Design

Studio Hinrichs

Text

Delphine Hirasuna

Photography

Terry Heffernan, except as noted.

Illustration

Elwood Smith

Printing

Mitsubishi Diamond Series 8 color 40" conventional sheetfed press. Mitsubishi Diamond Z 8 color 38" web press. All images are 175-line screen.

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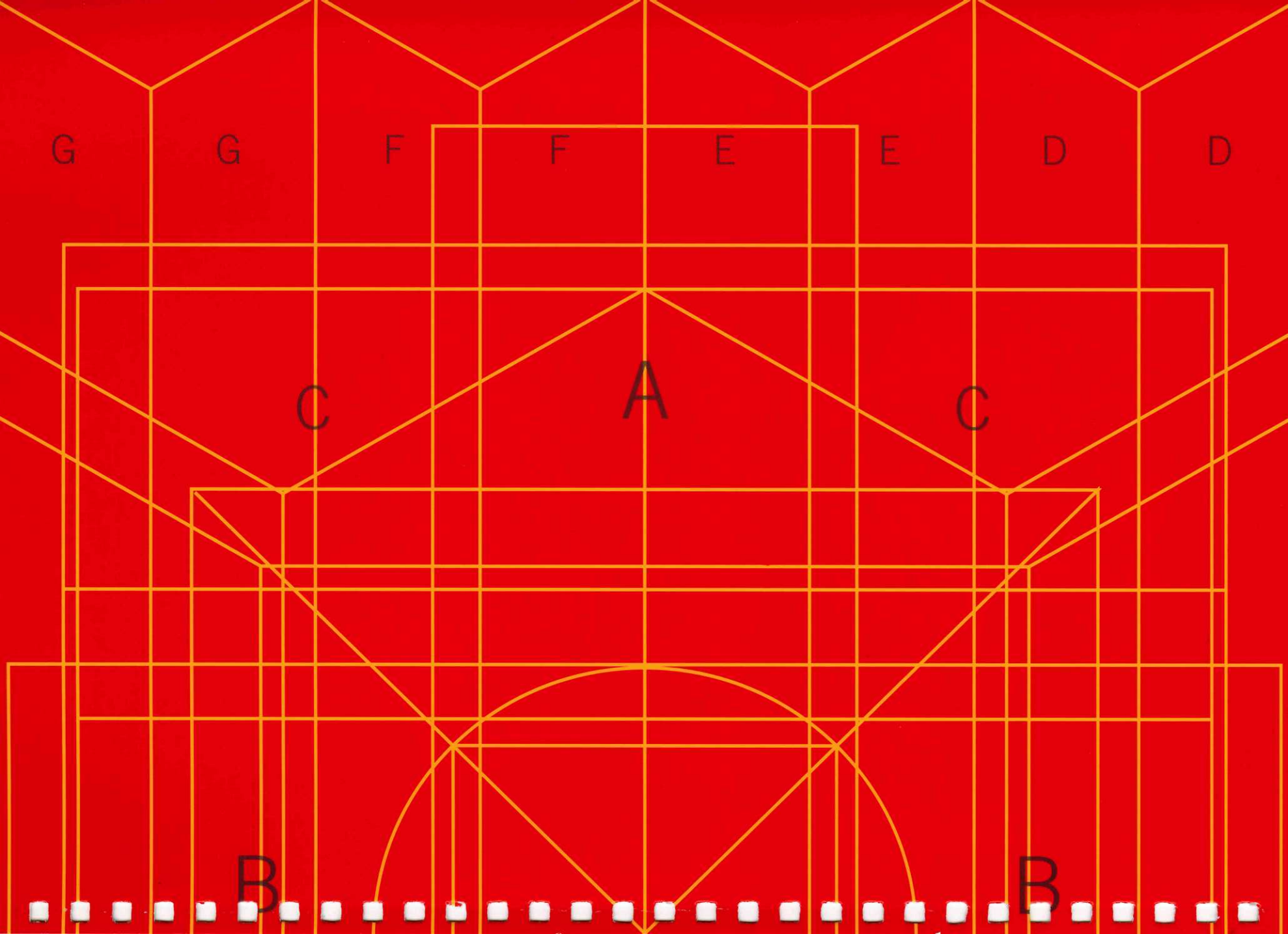
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