Advanced media – User guide.

Maps
Book jackets
Covers
Pages
Folders
Sleeves
Dividers
Documents
Tags
Tickets
Bags
Boxes

EnDURO

Added Value Papers

ashgrove
YOU START WE'LL FINISH
PRESENTATION - PACKAGING
PAPER - PRINT FINISHING

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Advanced media –
Advanced markets.

EnDURO combines

the advantages of **film**	with	the advantages of **paper**

film
- tear-resistant
- durable
- water-impermeable
- dimensionally stable

paper
- easy to print
- easy to fold
- easy to convert
- feels like paper

Strong like film – printable like paper.

EnDURO Publishing
Maps, book jackets, covers and pages, greetings cards, educational displays, technical drawings and plans, etc.

Tear-resistant Books. Covers. Maps.

EnDURO Commercial Printing
Folders, dividers, sleeves, documents, certificates, manuals, menus, membership cards, etc.

Tear-resistant. Easy to print. Durable.

EnDURO Tags & Tickets
Textile and clothing tags, logistic tags, durable event, transit and leisure tickets, tracking labels, etc.

Tear-resistant tags, labels and tickets.

EnDURO Packaging
Cartons + boxes, bags, pockets, sacks, wrapping + packaging, etc.

Tear-resistant packaging material. Protective.

Maps

Special benefits:
- strength and durability (so that maps no longer fall apart at the seams)
- reliable, easy folding
- high opacity

Applications:
- tourist maps
- road maps
- trekking/biking maps
- piste maps
- nautical charts
- train route maps
- city guides
- wall-planner, etc.

Key grades:

Classic W-80 YP
Classic Plus W-90 L
Premium 150 T

Tear-resistant. Easy to print. Durable.

Book jackets
Covers

Special benefits:	● better protects the book, even against humidity
	● won't become tattered
	● no additional overlamination necessary

Applications: book jackets and covers for
- reference books
- encyclopaedia
- guidebooks
- art books
- journals, etc.

Key grades:

Book jackets

Premium W-150 gloss
Premium 150 T
Ice 130 M

Covers

Premium 280 N
Premium 370 N
Ice 270 M

Pages

| Special benefits: | ● pages don't tear and continue to look good |
| | ● outstanding and high-value look (silver, golden or transparent appearance) |

Applications: pages or flysheets for
- high-value books/brochures
- art books
- religious books
- photo albums, etc.

Key grades:

Classic W-80 YP
Classic Plus W-90 L
Ice 80 M
Effect M-60 YP silver
Effect M-75 YP gold

Folders
Sleeves
Dividers

Documents

Special benefits:
- better protects contents, even against humidity
- no additional overlamination or reinforcement necessary
- EnDURO Ice: combines transparent, elegant appearance with durability and writability

Applications:
- sales/presentation folders/sleeves
- patient records
- corporate literature
- all other folders/sleeves/registers for school/office/personal use, etc.

Key grades:

Folders	Sleeves
Premium 280 N	**Classic Plus W-90 L**
Premium 370 N	**Classic Plus 100 L**
Ice 270 M	**Ice 80 M**
	Ice 130 M

Dividers

Premium 155 T
Premium 280 N
Ice 270 M

Special benefits:
- so that important documents stay intact and continue to look good

Applications:
- certificates (birth, insurance, examination, etc.)
- vouchers/coupons
- vaccination cards/medical records
- guarantees/warrantys
- manuals
- policy documents
- menus
- business cards
- special licenses (fishing, boating, firearms, etc.)
- membership cards
- ID cards/VIP passes

Key grades:

Classic 150 K
Premium 155 T
Classic 175 K
Classic 200 J

EnDURO
commercial printing

Tear-resistant. Easy to print. Durable.

EnDURO
commercial printing

Tear-resistant. Easy to print. Durable.

Tags
Tickets

Special benefits:	● tear-resistance means reliable labelling
	● V.I.P. (Variable Information Printing): thermal transfer, dot-matrix, inkjet and laser
Applications:	swing tags or loop-locks for
	● garment tags
	● logistic tags
	● baggage tags, etc.
	durable tickets for
	● event tickets
	● transit tickets
	● leisure tickets, etc.
Key grades:	**Classic 150 K**
	Premium 155 T
	Classic 175 K
	Classic 200 J
	Classic Plus 285 G
	Ice 170 M

tags
& tickets

Tear-resistant tags, labels and tickets.

Bags
Boxes

Special benefits:	● reliably protects contents
	● rugged packaging promotes your image
	● new options for promotional and functional packaging with EnDURO
Applications:	● shopping bags
	● pockets
	● folded cartons and boxes
Key grades:	Bags
	Classic Plus W-90 L
	Premium 155 T
	Ice 80 M
	Ice 130 M
	Effect 120 black
	Boxes
	Premium 280 N
	Premium 370 N
	Ice 270 M

packaging

Tear-resistant packaging material. Protective.

Printing and Converting of EnDURO

Due to a paper surface EnDURO may be printed and converted much like paper.

Printing process
EnDURO can be printed in all conventional printing processes: offset, flexo, litho, gravure, silk-screen etc.
EnDURO may also be printed by **digital laser printing** processes (both Indigo and dry toner systems) with **several OEM approvals** already gained.
Due to the variety of settings and applications practical tests should be completed prior to regular conversion.

Printing inks
All standard inks may be used.

Printing Equipment
As EnDURO handles just like paper, special printing plates, blankets & drying conditions are not necessary.
Even when UV-drying the product is not over stressed.

Storage and Converting conditions
EnDURO should be stored originally packed at ambient climate conditions of 23 +/- 5° C and 50 +/- 10 % rel. humidity.
As with paper based products in general, EnDURO needs some time to acclimatize to the available printing/converting conditions in order to prevent curl problems.
Hence, it is recommended to take EnDURO material to the print room and unwrap it at least 24 hours before printing.

Converting
EnDURO may be cut, folded, glued, punched, perforated and stitched – read on for further advice.

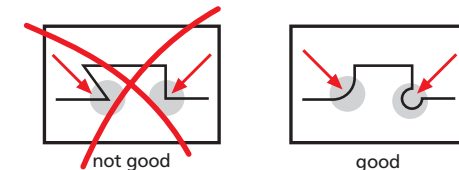When glueing you can use all adhesives – even hotmelt.

Cutting, Folding, Perforating of EnDURO

Cutting
To maintain good tear-resistance it is necessary to achieve smooth, clean cutting when processing.
Knives/tooling should be sharpened regularly and maintained in line with expectations. Cut edges should not be crushed, frayed or torn as such unevenness will compromise strength causing weakened edges. When cutting we recommend an angle of 23 - 25 degrees.
Equipment should be accurately adjusted so that knives kiss/meet the ground plates (made of either wood or metal).
Knives set to the incorrect depth/height lead to frayed edges!
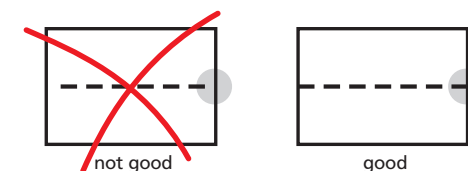

not good   good

Folding
EnDURO is foldable much like paper. It is possible that the dead fold is somewhat higher than with paper. The machine may be adjusted accordingly.
Folding along fibres direction is recommended. In case of maps with numerous foldings the most stressed folding should be along fibre direction.
We recommend to groove thicker EnDURO grades before folding. Similarly, heavier EnDURO Ice qualities should be scored to avoid paper cracking.

Perforating
The intital perforation must start at the edge of the material.

not good   good

	Characteristics	Weight gsm	Caliper µm	Grade	Maps
EnDURO (white paper surface)	very thin, high opacity	80	100	Classic W-80 YP	●
	smooth matt, easy to fold, high opacity	90	95	Classic Plus W-90 L	●
	smooth matt	100	115	Classic Plus 100 L	○
	gloss coated premium printing surface	140	120	Premium W-150 gloss	○
	high quality offset, popular all-rounder	145	175	Classic 150 K	
	matt coated premium printing surface	145	135	Premium 150 T	●
	matt coated, stronger than Premium 150 T	155	135	Premium 155 T	○
	high quality offset, stronger than Classic 150 K	180	185	Classic 175 K	
	silk matt	190	180	Classic Plus 190 G	
	smooth offset	205	215	Classic 200 J	○
	gloss coated premium printing surface	210	185	Premium 210 gloss	○
	smooth matt	285	265	Premium 280 N	
	silk matt, very strong	290	240	Classic Plus 285 G	
	smooth matt, very heavy and stable	375	360	Premium 370 N	
EnDURO Ice (transparent)		65	85	Ice 60 M	
	A comprehensive range of transparent papers	80	105	Ice 80 M	
	- elegant design and transparent look	125	155	Ice 130 M	
	- perfect to print and easy to convert	170	205	Ice 170 M	
	- tear-resistant and water-impermeable	215	255	Ice 220 M	
		260	305	Ice 270 M	
EnDURO Effect (special optic)	silver shimmer, extra high opacity	65	85	Effect M-60 YP silver	
	gold shimmer, extra high opacity	75	85	Effect M-75 YP gold	
	deep black both sides	115	150	Effect 120 black	

tear-resistant · water-impermeable · durable · print friendly · great runability · high value · easy to fold · dimensionally stable

Book jackets	Covers	Pages	Folders	Sleeves	Dividers	Documents	Tags Tickets	Bags	Boxes	Recycling*
		●								✔
		●		●		○		●		✔
		○		●		○				✔
●				○	○	○	○	○		✔
○				○	○	●	●			✔
●				○	○	○	○	○		✔
○					●	●	●	●		✔
					○	●	●			✔
					○	○	○			✔
					○	●	●			✔
	○		○	○	○	○	○			✔
	●		●		●	○			●	✔
						○	●			✔
	●		●		○				●	✔
		○		○				○		✔
○		●		●				●		✔
●				●	○	○	○	●		✔
○			○		○	○	●	○		✔
	○		○		○	○		○	○	✔
	●		●		●				●	✔
		●				○		○		—
		●				○		○		—
○				○		○		●		✔

● Key grade = most popular grade; especially developed for this particular application

○ alternative grade

*Recycling

✔ These products can be recycled with other paper products. Due to the film content of more than 5 % of the overall product, these products are declared as recyclable according to category II of the PTS (Papiertechnische Stiftung).

✔ These products can be recycled with other paper products, but due to the film content of more than 50% of the overall product, the PTS (Papiertechnische Stiftung) test method RH 021/97 regards the benefit of recovery as neglible.

— These products may be disposed of with other paper waste or incinerated. They are biologically neutral. Due to the silver/gold coating they can't be officially declared as being recyclable.