

## Black & white film ISO 400/27°

Large exposure allowance from ISO 100 to 1600 - Wide dynamic range  
High resolution - Easy to manage contrast - Extended grey scale.

### BERGGER Pancro400

#### Sizes

Rolls : 135 / 120

Sheets : 4x5 / 5x7 / 13x18 / 8x10

**Sensitivity : ISO 400**

**Grain : Fine**

**Resolution : High**



BERGGER Pancro 400 is a fast, fine grain, black and white film for photographic purpose. Exposed at ISO 400, the film delivers outstanding high quality photographs. It gives also outstanding results from 100 to 1600 ISO, with adequate processing.

BERGGER Pancro400 anti-halation layer is coated on the same emulsion side for every kind of film (135 and 120 roll films and sheet films). The undercoated anti-halation layer clears during processing.

BERGGER Pancro400 in 135 is coated on a 135 microns acetate base and includes DX Coding.

BERGGER Pancro400 in 120 is coated on a 100 microns PET base and includes an anti curling layer.

BERGGER Pancro400 in sheets is coated on a 175 microns PET base and includes an anti curling layer. The emulsion faces the user when the notch is in the upper right or lower left corner.

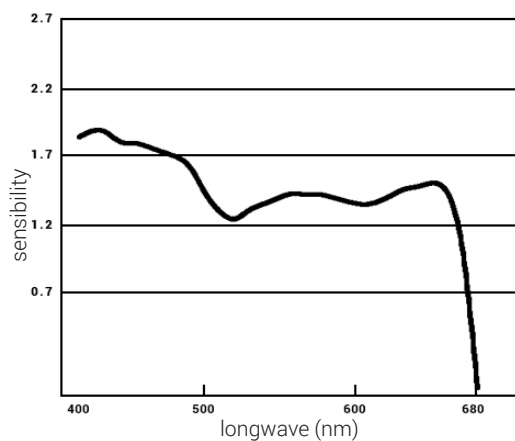


## Film composition

BERGGER Pancro 400 includes two photographic Silver-Bromide/Iodide emulsions that differ in grain size in order to achieve the films outstanding exposure range.

Pancro400 anti-halation layer is coated on the same emulsion side for every kind of film (135 and 120 roll films and sheet films). This gives the film its famous very high resolution.

## Spectral sensibility



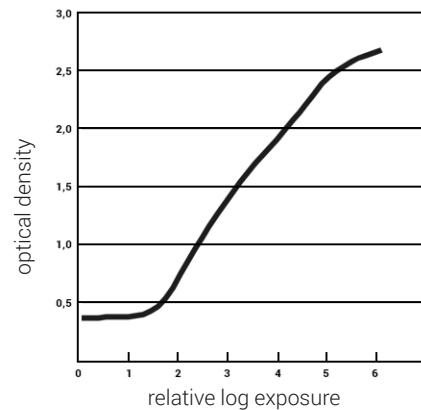
BERGGER Pancro400 is a panchromatic film sensitive to all visible colours of the spectrum.

## Filter factors

BERGGER Pancro400 may be used with all types of filters (eg colour, polarising and neutral density filters) in the usual way. For corrections, follow the instructions given by the filter manufacturer.

## Densitometric curve

BERGGER Pancro400 processed in D76 stock. Gamma 0,7.



## Long exposure corrections

BERGGER Pancro400 exhibits no reciprocity failures for exposures shorter than one second. For longer exposure times, please follow the table below.

Theoretical exposure time	Correction (f - stop)
< 1 s	-
1 s	+ 0,5
10 s	+ 1
60 s	+ 2

## Processing of film

### Presoaking

It is highly recommended to presoak in water at least for one minute. The water should be at the same temperature as process temperature.

Before using BERGGER PMK developer, the film must be presoaked in water for 5 minutes, at one degree warmer than developer.

### Developer

Developing times are given for a contrast of 0,7 in the following chart.

It is recommended to agitate during the 30 first seconds, and then, ten seconds at the top of every minute.

If using BERGGER PMK, the tank must be agitated during the 30 first seconds, and then two agitations every 15 seconds.

### Stop bath

A stop bath, composed by acetic acid (2%) can be used to stop the action of the developer, before using the fixer. Time of this bath must be comprised between 30 seconds and 60 seconds, and its temperature must be the same as the rest of the process.

It is possible to replace this bath with a plain water bath, at the same temperature as the process. Using water allows the film to continue developing in the shadows during the stop stage.

### Fixer

BERGGER PANCRO 400 needs a longer the usual fixing time. In rapid, non hardening fixer, it is recommended to use a dilution of 1+4 for 6 minutes.

### Washing

BERGGER recommends the following washing sequence, which is efficient and environment friendly.

- A rinse in a sulphite bath (10 %) will allow to eliminate the chemicals complexes resulting from fix bath, and also allow the full dissolution of the anti-halation layer.
- 10 washes in clear water, every ten minutes will allow to eliminate all chemical residue remaining in the gelatin.
- Final rinse in demineralized water, with wetting agent at the concentration of 1+200.

### Soaking

The film should be hung to dry in a dry and dust-free environment. It is recommended to eliminate the water drop that forms at the lower corner of the film, with a tissue, or absorbing paper.

## Developing times - 400 ISO

The following developing times are given as a starting point, to reach a contrast value of  $\gamma=0,70$ , when the film is rated at 400 ISO. These developing times can be adapted, depending on the photographer's needs. From 20° to 24°, the given developing times allows a soft grain and a wide range of grey.

Developer	EI	20°	21°	22°	24°
Ars-Imago FD	1+39	10'30	9'45	9'	7'40
Bergger BER49	Stock	14'	12'50	11'45	10'
Bergger BER49	1+1	23'	21'30	20'	17'30
Bergger BERSPEED	1+1	12'	11'	10'15	8,45
Bergger PMK	1+2+100	18'	16'30	15'15	13'
Kodak D76	Stock	9'	8'20	7'40	6'30
Kodak D76	1+1	17'	15'45	14'30	12'15
Kodak HC-110	B	9'	8'20	7'40	6'30
Kodak XTOL	Stock	10'	9'15	8'30	7'15
Kodak XTOL	1+1	18'	16'30	15'15	13'
Rollei SUPERGRAIN	1+9	9'30	8'40	8'	6'45
R09 One Shot / Rodinal	1+25	8'	7'20	6'45	NR
R09 One Shot / Rodinal	1+50	22'	20'30	19'	16'30
R09 Studio / Studional	1+15	6'	NR	NR	NR

## Developing times - 800 ISO

It's possible to push BERGGER Pancro400 for one stop and keep moderate contrast and extended grey scale. Developing time must be adapted. BERGGER suggests the following developing time BERGGER BERSPEED 1+1, 24°C, 10'50.

## Developing times - 1600 ISO

It's possible to push BERGGER Pancro400 for two stops and keep moderate contrast and extended grey scale. Developing time must be adapted. BERGGER suggests the following developing time BERGGER BERSPEED 1+1, 24°C, 13'45.

## Time / temp chart

To adapt your development time according to your preferences, you can refer to this Time / temp chart.

	Temp				
	20°	21°	22°	23°	24°
	4'	NR	NR	NR	NR
	4'30	4'	NR	NR	NR
	5'	4'30	4'15	4	NR
	5'30	5'	4'30	4'15	4'
	6'	5'30	5'	4'45	4'15
	6'30	6'	5'30	5'	4'45
	7'	6'30	6'	5'30	5'
	7'30	7'	6'25	5'55	5'25
	8'	7'20	6'45	6'15	5'45
	8'30	7'45	7'15	6'45	6'10
	9'	8'20	7'40	7'	6'30
	9'30	8'40	8'	7'30	6'45
	10'	9'15	8'30	7'45	7'15
	10'30	9'45	9'	8'15	7'40
	11'	10'15	9'15	8'40	8'
	11'30	10'40	9'45	9'	8'15
	12'	11'	10'15	9'20	8'45
	12'30	11'30	10'40	9'45	9'
	13'	12'	11'	10'15	9'25
	13'30	12'30	11'30	10'35	9'45
	14'	12'50	11'45	11'	10'
	14'30	13'25	12'15	11'25	10'30
	15'	13'45	12'40	11'45	10'50
	15'30	14'15	13'15	12'15	11'15
	16'	14'45	13'40	12'30	11'30
	16'30	15'15	14'	13'	11'
	17'	15'45	14'30	13'15	12'15
	17'30	16'15	14'45	13'40	12'30
	18'	16'30	15'15	14'10	13'
	18'30	17'	15'45	14'30	13'25
	19'	17'30	16'10	14'50	13'45
	19'30	18'	16'30	15'20	14'15
	20'	18'30	17'	15'45	14'30