

INDUX R4

INDUSTRIAL X-RAY FILM

General information

INDUX R4 is an industrial radiographic film intended for non-destructive material testing using X- or gamma radiation. INDUX R4 is a medium-speed, high-contrast, extremely fine-grain film suitable for radiography with or without lead screens. It is an ideal film for most standard applications. INDUX R4 corresponds with the class C3 classification according to the EN 584-1 standard or according ASTM E 1815 standard with class I.

Applications

INDUX R4 should be used at low voltages for the radiography of thin-to-medium thick-walled light metal parts/products. At higher voltages the film is suitable for the testing of thick-walled light metal or thin-walled steel parts/products. With high-energy gamma rays the film is suitable for the radiography of thick-walled dense metal parts/products.

Packaging forms

daylight packaging (FOMAPAK) – one-sheet vacuum-sealed packaging with lead screens of 0,025 mm thickness
 Sizes: 6x24, 6x30, 6x48, 10x12, 10x16, 10x24, 10x30 and 10x48 cm in boxes of 50 sheets.

The vacuum-sealed packaging FOMAPAK ensures optimum contact of film surface with lead screens, simple handling, and is light-tight, air-tight and waterproof.

darkroom packaging (KB)

Sizes: 6x24, 6x48, 10x12, 10x24, 10x48 and 10x72 cm in boxes of 100 sheets

Sizes: 18x24, 24x30, 30x40 and 35x43 cm interleaved (IF, FW) in boxes of 50 sheets.

daylight roll film packaging (FOMADUX ROLLFILM)

with lead screens in a light-tight paper envelope sized 70 mm x 90 m or 100 mm x 90 m, supplied as a roll in a cardboard dispenser box

Other sizes are subject to be agreed with the manufacturer.

Film base

INDUX R4 is manufactured on a dimensionally stable bluish polyester base of 0,175 mm thickness.

Screens

Screens-packed kinds (FOMAPAK) content lead screens 0,025 mm thick, backed by a paper of 70 - 90 g/sq. m of basis weight, on both film sides.

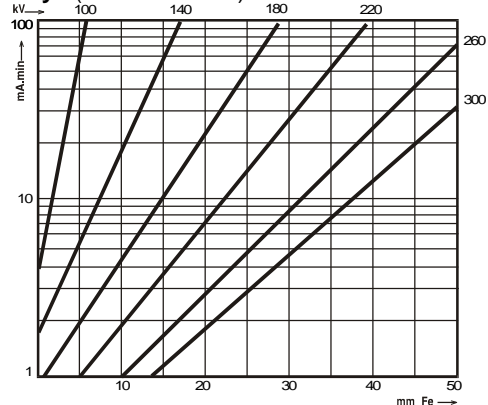
Darkroom illumination

INDUX R4 should be handled and processed under indirect safelight illumination with a wavelength over 520 nm. Recommended are safelight filters Agfa R1 filter (dark red) or Agfa G7 filter (olive-green) in a safelight lamp with a 25 watt bulb and placed in a distance of minimum 75 cm between the reflective surface and the film, or LED light sources with a wavelength of 660 nm or 590 nm.

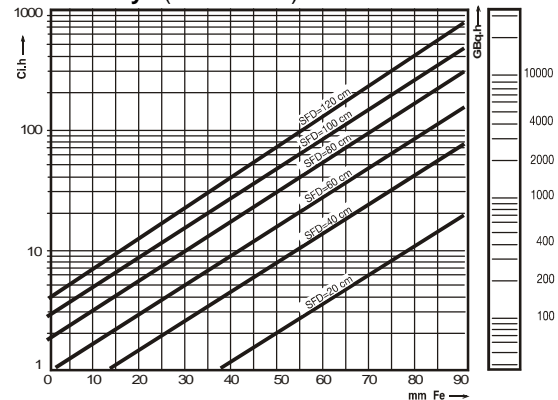
Exposure charts for steel

For optical density D=2, front and back lead screens 0,025 mm thick, FOMADUX LP-T Developer 5 minutes at 20 °C.

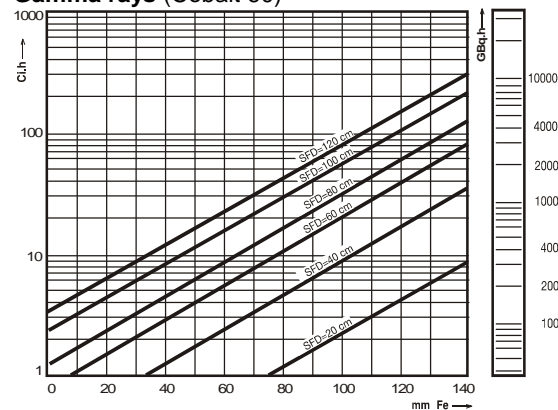
X-rays (FDD = 100 cm)



Gamma rays (Iridium 192)



Gamma rays (Cobalt 60)



Processing

INDUX R4 is intended both for the manual and automatic processing.

Recommended chemicals for the manual processing:

FOMADUX LP-T Developer and Developer-Replenisher
(5 minutes of developing time at 20 °C, 1 + 3)

FOMAFIX Rapid Fixer

Recommended chemicals for the automatic processing:

FOMADUX LP-D Developer-Replenisher
(2 minutes of developer immersion time at 28 °C)

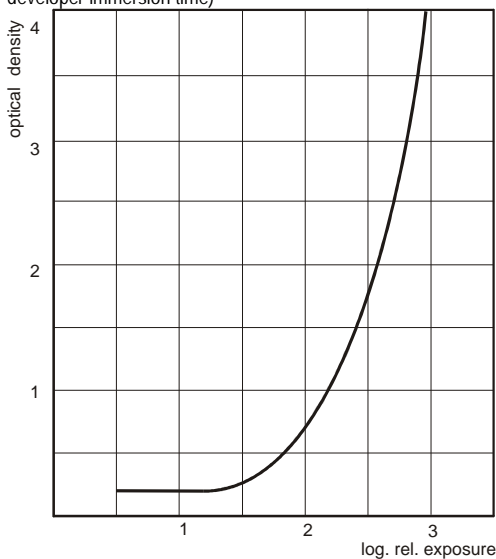
FOMA LP-DS Developer Starter

FOMAFIX + FOMAFIX H Hardening Rapid Fixer.

INDUX R4 can also be processed in corresponding processing chemicals of other manufacturers, for example developer Agfa G135 for automatic processing 2 minutes of developer immersion time at 28 °C or for manual processing 5 minutes of developing time at 20 °C.

Sensitometric characteristic

Source ISO 2 (220 kV/10 mA/8 mm Cu), automatic processing, FOMADUX LP-D Developer, 8 minutes of processing time at 28 °C (corresponds with 2 minutes developer immersion time)



Archiving of processed films

The manufacturer guarantees the archival permanence of minimum 50 years when complying with conditions following:

- films must be perfectly fixed and washed
- films must be stored at a relative humidity of 30 to 60% out of reach of harmful gases.

Storage of unexposed films

Unexposed films should be stored in the vertical position in the original packaging in a dry and cool place at a temperature of 5 to 21 °C and at a relative humidity of 40 to 60 %, out of reach of harmful gases and any ionizing radiation.

Exposed films should be processed as soon as possible.

The product has been produced and marketed in conformity with a quality system according to the international standard EN ISO 9001:2000.

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