

## RD 50<sup>®</sup> RADIATION SHIELDING GLASS

### Features

Our glass provides excellent protection against gamma and X-ray absorption. Main markets: analysis, research and medicine.

Lead equivalent of 1.0 mm to 6.3 mm Pb are supplied as monoglass. Higher lead equivalents can be realized with PVB-foil or cast resin composites. The glass thicknesses are calculated in each case by the required PB value.

### max. Dimensions are available:

1,5 – 2,5 mm Pb = max: 2.400 x 1.100 mm;

3,0 – 3,5 mm Pb = max. 2.000 x 1.000 mm;

5,0 – 6,1 mm Pb = max. 1.500 x 800 mm

### It is non-flammable and can not be thermally tempered.

Thanks to its high density, RD 50<sup>®</sup> achieves high X-ray absorption even at low glass thickness and meets the requirements of the German Institute for Standardization, European Standardization and the International Electrotechnical Commission. Quality product with „Made in Germany“ and DIN certification EN 61331-2 and IEC 61331-2.

### Environments / Applications

Hospital X-ray protection, MRI scanning, observation windows, door glazing, nuclear medicine application, special mitre joint and lamination with float glass allow extended window sizes, creating better observation environments. Multiple glazing units providing shaped observation solutions.

Due to its special composition, RD 50<sup>®</sup> is also excellently suited for PET applications and offers optimum protection effect. Therefore RD 50<sup>®</sup> can be used in the combination of PET and CT. Key markets are analytical and medical.

### variants

RD 50<sup>®</sup> is available in large dimensions and higher lead equivalents (> 6.1 mm Pb) can be achieved by using composites. It can be processed into insulating glass in combination with sound control or heat protection.

RD 50<sup>®</sup> can be supplied as raw or finished component and processed:

Edges and bevel grinded, holes, cut-outs and desired sizes.

Special mitre joint and lamination with PVB-foil and float glass allow large window sizes for a better observation environments.

Individual dimensions and round machining.

Multiple glazing units providing shaped observation solutions.

Screen printing.

### specifications

RD 50<sup>®</sup> is the monolithic X-ray protective glass with a glass thickness of 8.1 mm \*, weighted sound reduction index  $R_w$ , spectrum adaptation values C and Ctr

$R_w$  (C; Ctr) = 41 (-3; -3) dB \* Sound insulation values for other thicknesses on request.

Density in g / cm<sup>3</sup> (delivery condition)  $\geq 5.05$

Hydrolytic class according to DIN ISO 719 HGB 1

Content of lead oxide (PbO)  $\geq 65\%$

Total heavy metal oxide content  $\geq 70\%$

## **Installation, cleaning and care**

Only use water, a mild detergent and a soft cloth.

RD 50® can be disinfected using commercially available disinfectants that Pape Strahlenschutz GmbH has approved. Disinfection using ultraviolet irradiation is also possible. Radiation shielding glass should never be exposed to moisture or temperature fluctuations in acidic air.

Only use a sealant that is free of acids and alkaline substances (e. g. acetic acid, ammonia) during installation. Adhesive labels can cause discoloration if the adhesive reacts with the glass surface. Do not remove the protective film from radiation shielding glass until immediately before installation. Do not use any sharp objects to remove it.

Please follow the on-site requirements of DIN6812 when installing RD 50®. Sufficient radiation protection overlap must definitely be ensured during installation.

## Radiation shielding glass SCHOTT RD 50<sup>®</sup> and RD 30<sup>®</sup>

On the safe side with  
SCHOTT

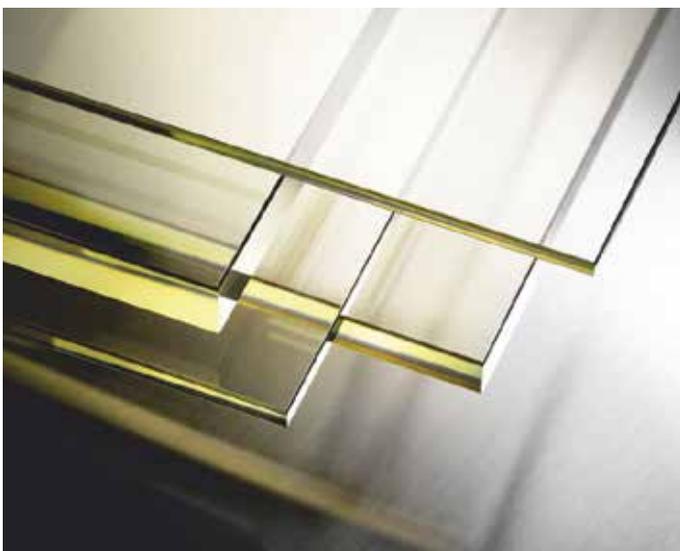
### SCHOTT AG and Pape Strahlenschutz GmbH are reliable partners

Our team is working in the sales and product-management of Radiation Shielding Glass since 1997. After long time in the sales of the SCHOTT AG products RD 30<sup>®</sup> and RD 50<sup>®</sup> Ute and Martin Pape established their own company as an authorised dealer for the German and East/South-European market for all inquiries and orders  $\leq$  Euro 5.000,00.

We provide you with much more than glass - customer specific solutions. Depending on the application, either RD 50<sup>®</sup> or RD 30<sup>®</sup> should be used. The value „50“ stands for a density of at least 5.05 g/cm<sup>3</sup> and „30“ stands for a density of at least 3.13 g/cm<sup>3</sup>.

### At home in medicine, science and industry

SCHOTT radiation shielding glasses can be found in many different areas of medicine, science and industry, particularly X-ray rooms, operating rooms, radiotherapy stations, dental clinics, laboratories and material testing. In the area of mammography, for instance in hospitals, medical practices CT and PET many well known manufacturerers use radiation shielding glass of SCHOTT.



Pape Strahlenschutz GmbH



Authorised representative/fabricator of:

**SCHOTT**  
glass made of ideas



### Highly committed team - advisory skills

You will benefit from the synergy effects that result from expert advice and our broad product range:

- » radiation shielding glass in combination with PVB-foil and float glass 3 - 8 mm one or two sided
- » cast-in-place lamination process
- » round glasses DIA 10 - 350 mm
- » individual profile cut
- » edges (matt) grinded and polished
- » mitre joint, i.e. 45 degree
- » drill hole dia 5- 290 mm
- » matting
- » marking
- » converting heat-absorbing glass, also with jalousie inside
- » frames and spacer

# Radiation shielding glass SCHOTT RD 50® and RD 30®

## facts and figures

Pape Strahlenschutz GmbH



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glass made of ideas

RD 50®: Lead equivalents in mm Pb for x-radiation quality and maximum delivery sizes

| Minimal thickness in mm | Maximum thickness in mm | Attenuation equivalent in mm Pb at a tube voltage of: |        |        |        |        | Maximum weight in kg per m <sup>2</sup> | Maximum dimension in mm x mm |
|-------------------------|-------------------------|---|--------|--------|--------|--------|---|------------------------------|
|                         |                         | 80 kV   | 100 kV | 110 kV | 150 kV | 200 kV |   |                              |
| 5,0                     | 7,0                     | 1,5   | 1,5    | 1,5    | 1,5    | 1,4    | 33                                      | 2400x1100                    |
| 7,0                     | 9,0                     | 2,1   | 2,1    | 2,1    | 2,1    | 2,0    | 43                                      | 2400x1100                    |
| 8,5                     | 10,5                    | 2,6   | 2,6    | 2,5    | 2,5    | 2,4    | 51                                      | 2400x1100                    |
| 10,0                    | 12,0                    | 3,1   | 3,1    | 3,0    | 3,0    | 2,9    | 59                                      | 2000x1000                    |
| 11,5                    | 14,0                    | 3,5   | 3,6    | 3,5    | 3,5    | 3,3    | 66                                      | 2000x1000                    |
| 16,0                    | 19,0                    | -   | 5,0    | 4,9    | 4,9    | 4,6    | 91                                      | 1500x800                     |
| 20,0                    | 23,0                    | -   | 6,3    | 6,1    | 6,1    | 5,8    | 91                                      | 1500x800                     |

\* No tube voltage according to DIN EN61331-1; other voltages upon request or from our website

RD 50®: Lead equivalents in mm Pb for radionuclides

| Nuklide                  | Attenuation equivalent in mm Pb at a thickness of: |        |        |        |         |         |         |         |
|--------------------------|--|--------|--------|--------|---------|---------|---------|---------|
|                          | 4,0 mm   | 5,0 mm | 7,0 mm | 8,5 mm | 10,0 mm | 11,5 mm | 16,0 mm | 20,0 mm |
| C-11, N-13<br>O-15, F-18 | 1,4  | 1,8    | 2,6    | 3,1    | 3,7     | 4,2     | 5,9     | 7,4     |
| CO-58                    | 1,6  | 2,0    | 2,8    | 3,4    | 4,0     | 4,6     | 6,4     | 7,9     |
| CO-60                    | 1,7  | 2,2    | 3,1    | 3,7    | 4,4     | 5,1     | 7,1     | 8,9     |
| Fe-59                    | 1,7  | 2,2    | 3,1    | 3,7    | 4,4     | 5,1     | 7,0     | 8,8     |
| Tc-99m                   | 1,1  | 1,4    | 2,0    | 2,4    | 2,9     | 3,3     | 4,6     | 5,7     |

Additional radionuclides are available upon request or from our website. In certain cases, we present the lead equivalents on the basis of the Monte Carlo N-Particle Transport Code (MCNP) that has been experimentally validated.

RD 30®: Lead equivalents in mm Pb and dimension

| Glas thickness in mm | Attenuation equivalent in mm Pb at a tube voltage of: |       |       |       |        |        | Maximum weight in kg per m <sup>2</sup> | Maximum dimension in mm x mm |
|----------------------|---|-------|-------|-------|--------|--------|---|------------------------------|
|                      | 50 kV   | 56 kV | 76 kV | 80 kV | 110 kV | 150 kV |   |                              |
| 6,0±0,25             | ≥ 0,5   | ≥ 0,5 | ≥ 0,5 | ≥ 0,5 | ≥ 0,5  | ≥ 0,5  | 20                                      | 2350 x 1650                  |

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