



**KNAUF**CEILING  
Solutions

## DATASHEET

# METAL Solutions BIOGUARD



- BIOGUARD is designed for applications where suspended ceilings are required, and hygiene and cleanliness are of the utmost importance
- It is more effective in the control of bacteria than a standard powder coating because it prevents the settlement of bacteria on the surface of the tile
- It gives good cleanability and resistance to disinfectants as well as cleanroom performance

- A wide range of edge details, modules and sizes is available, suitable for rooms and corridors
- One of the most durable solutions among the healthcare range
- Clean room class up to ISO 1
- Excellent sound attenuation for increased confidentiality: 44dB

| <b>Edge details</b>        |              | Various edge details are available for lay-in, clip-in, hook-on and corridors  |      |              |       |                           |      |      |      |       |       |       |                |                 |         |                           |             |  |  |  |  |  |       |                 |             |     |     |     |      |      |      |              |         |    |      |      |      |      |      |      |      |       |       |   |                  |         |   |      |      |      |      |      |      |      |       |      |   |                  |      |   |      |      |      |      |      |      |      |       |      |       |                  |         |   |      |      |      |      |      |      |      |       |       |       |
|----------------------------|--------------|--|------|--------------|-------|---------------------------|------|------|------|-------|-------|-------|----------------|-----------------|---------|---------------------------|-------------|--|--|--|--|--|-------|-----------------|-------------|-----|-----|-----|------|------|------|--------------|---------|----|------|------|------|------|------|------|------|-------|-------|---|------------------|---------|---|------|------|------|------|------|------|------|-------|------|---|------------------|------|---|------|------|------|------|------|------|------|-------|------|-------|------------------|---------|---|------|------|------|------|------|------|------|-------|-------|-------|
| <b>Dimensions (mm)</b>     |              | Standard modules: 600 x 600, 625 x 625, 1200 x 600, 1250 x 625, depending on selected system.<br>Additional sizes on request.<br>Vario Design range: Panels up to 3300 length. See metal brochure for more detailed information.   |      |              |       |                           |      |      |      |       |       |       |                |                 |         |                           |             |  |  |  |  |  |       |                 |             |     |     |     |      |      |      |              |         |    |      |      |      |      |      |      |      |       |       |   |                  |         |   |      |      |      |      |      |      |      |       |      |   |                  |      |   |      |      |      |      |      |      |      |       |      |       |                  |         |   |      |      |      |      |      |      |      |       |       |       |
| <b>System</b>              |              | Various exposed and concealed grid options   |      |              |       |                           |      |      |      |       |       |       |                |                 |         |                           |             |  |  |  |  |  |       |                 |             |     |     |     |      |      |      |              |         |    |      |      |      |      |      |      |      |       |       |   |                  |         |   |      |      |      |      |      |      |      |       |      |   |                  |      |   |      |      |      |      |      |      |      |       |      |       |                  |         |   |      |      |      |      |      |      |      |       |       |       |
| <b>Thickness (mm)</b>      |              | 0.5 - 0.7 mm depending on the selected system  |      |              |       |                           |      |      |      |       |       |       |                |                 |         |                           |             |  |  |  |  |  |       |                 |             |     |     |     |      |      |      |              |         |    |      |      |      |      |      |      |      |       |       |   |                  |         |   |      |      |      |      |      |      |      |       |      |   |                  |      |   |      |      |      |      |      |      |      |       |      |       |                  |         |   |      |      |      |      |      |      |      |       |       |       |
| <b>Weight</b>              |              | 3.1 - 7.8 kg/m <sup>2</sup><br>Weight varies depending on the selected system and perforation.   |      |              |       |                           |      |      |      |       |       |       |                |                 |         |                           |             |  |  |  |  |  |       |                 |             |     |     |     |      |      |      |              |         |    |      |      |      |      |      |      |      |       |       |   |                  |         |   |      |      |      |      |      |      |      |       |      |   |                  |      |   |      |      |      |      |      |      |      |       |      |       |                  |         |   |      |      |      |      |      |      |      |       |       |       |
| <b>Colour</b>              |              | <div style="border: 1px solid #0070C0; padding: 5px;"> <p><b>Other colours</b></p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <br/>RAL 9010             </div> <div style="text-align: center;"> <br/>RAL 9016             </div> </div> <p>Other colours from popular RAL colour system are available</p> </div>  |      |              |       |                           |      |      |      |       |       |       |                |                 |         |                           |             |  |  |  |  |  |       |                 |             |     |     |     |      |      |      |              |         |    |      |      |      |      |      |      |      |       |       |   |                  |         |   |      |      |      |      |      |      |      |       |      |   |                  |      |   |      |      |      |      |      |      |      |       |      |       |                  |         |   |      |      |      |      |      |      |      |       |       |       |
| <b>Perforations</b>        |              | <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="text-align: center;"> <br/>Unperforated         </div> <div style="text-align: center;"> <br/>Standard perforation<br/><b>Rg 2516</b><br/>Ø: 2.5mm<br/>Open area: 16%         </div> <div style="text-align: center;"> <br/>Micro-perforation<br/><b>Rd 1522</b><br/>Ø: 1.5mm<br/>Open area: 22%         </div> <div style="text-align: center;"> <br/>Extramicro perforation<br/><b>Rg 0701</b><br/>Ø: 0.7mm<br/>Open area: 1.5%         </div> </div>  |      |              |       |                           |      |      |      |       |       |       |                |                 |         |                           |             |  |  |  |  |  |       |                 |             |     |     |     |      |      |      |              |         |    |      |      |      |      |      |      |      |       |       |   |                  |         |   |      |      |      |      |      |      |      |       |      |   |                  |      |   |      |      |      |      |      |      |      |       |      |       |                  |         |   |      |      |      |      |      |      |      |       |       |       |
| <b>Sound absorption</b>    |              | <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="3"></th> <th rowspan="3"><math>\alpha_w^*</math></th> <th rowspan="3">Class</th> <th colspan="7">EN ISO 354</th> <th>EN ISO 10848-2</th> <th>EN ISO 10140-2</th> <th rowspan="3">CAC****</th> </tr> <tr> <th colspan="7">Frequency (Hz) <math>\alpha_p</math></th> <th rowspan="2">NRC**</th> <th rowspan="2"><math>D_{n,w}^{***}</math></th> <th rowspan="2"><math>R_w^{***}</math></th> </tr> <tr> <th>125</th> <th>250</th> <th>500</th> <th>1000</th> <th>2000</th> <th>4000</th> </tr> </thead> <tbody> <tr> <td>Unperforated</td> <td>0.10(L)</td> <td>NC</td> <td>0.25</td> <td>0.15</td> <td>0.05</td> <td>0.05</td> <td>0.10</td> <td>0.10</td> <td>0.10</td> <td>44 dB</td> <td>19 dB</td> <td>-</td> </tr> <tr> <td>Rg 2516 + Fleece</td> <td>0.75(L)</td> <td>C</td> <td>0.35</td> <td>0.80</td> <td>0.95</td> <td>0.70</td> <td>0.75</td> <td>0.75</td> <td>0.80</td> <td>18 dB</td> <td>8 dB</td> <td>-</td> </tr> <tr> <td>Rd 1522 + Fleece</td> <td>0.70</td> <td>C</td> <td>0.30</td> <td>0.65</td> <td>0.90</td> <td>0.65</td> <td>0.70</td> <td>0.75</td> <td>0.70</td> <td>16 dB</td> <td>6 dB</td> <td>16 dB</td> </tr> <tr> <td>Rg 0701 + Fleece</td> <td>0.55(L)</td> <td>D</td> <td>0.45</td> <td>0.70</td> <td>0.70</td> <td>0.55</td> <td>0.55</td> <td>0.45</td> <td>0.65</td> <td>21 dB</td> <td>10 dB</td> <td>22 dB</td> </tr> </tbody> </table> <p>*as per EN ISO 11654 **as per ASTM C 423-01 ***as per EN ISO 717-1 ****as per ASTM E 413-10</p> <p>The unperforated version is recommended, because it gives the best antimicrobial result.<br/>The perforated options increase the acoustic values, but the antimicrobial performance is somewhat reduced.</p> |      | $\alpha_w^*$ | Class | EN ISO 354                |      |      |      |       |       |       | EN ISO 10848-2 | EN ISO 10140-2  | CAC**** | Frequency (Hz) $\alpha_p$ |             |  |  |  |  |  | NRC** | $D_{n,w}^{***}$ | $R_w^{***}$ | 125 | 250 | 500 | 1000 | 2000 | 4000 | Unperforated | 0.10(L) | NC | 0.25 | 0.15 | 0.05 | 0.05 | 0.10 | 0.10 | 0.10 | 44 dB | 19 dB | - | Rg 2516 + Fleece | 0.75(L) | C | 0.35 | 0.80 | 0.95 | 0.70 | 0.75 | 0.75 | 0.80 | 18 dB | 8 dB | - | Rd 1522 + Fleece | 0.70 | C | 0.30 | 0.65 | 0.90 | 0.65 | 0.70 | 0.75 | 0.70 | 16 dB | 6 dB | 16 dB | Rg 0701 + Fleece | 0.55(L) | D | 0.45 | 0.70 | 0.70 | 0.55 | 0.55 | 0.45 | 0.65 | 21 dB | 10 dB | 22 dB |
|                            | $\alpha_w^*$ | Class  |      |              |       | EN ISO 354                |      |      |      |       |       |       | EN ISO 10848-2 | EN ISO 10140-2  |         | CAC****                   |             |  |  |  |  |  |       |                 |             |     |     |     |      |      |      |              |         |    |      |      |      |      |      |      |      |       |       |   |                  |         |   |      |      |      |      |      |      |      |       |      |   |                  |      |   |      |      |      |      |      |      |      |       |      |       |                  |         |   |      |      |      |      |      |      |      |       |       |       |
|                            |              |  |      |              |       | Frequency (Hz) $\alpha_p$ |      |      |      |       |       |       | NRC**          | $D_{n,w}^{***}$ |         |                           | $R_w^{***}$ |  |  |  |  |  |       |                 |             |     |     |     |      |      |      |              |         |    |      |      |      |      |      |      |      |       |       |   |                  |         |   |      |      |      |      |      |      |      |       |      |   |                  |      |   |      |      |      |      |      |      |      |       |      |       |                  |         |   |      |      |      |      |      |      |      |       |       |       |
|                            |              |  | 125  | 250          | 500   | 1000                      | 2000 | 4000 |      |       |       |       |                |                 |         |                           |             |  |  |  |  |  |       |                 |             |     |     |     |      |      |      |              |         |    |      |      |      |      |      |      |      |       |       |   |                  |         |   |      |      |      |      |      |      |      |       |      |   |                  |      |   |      |      |      |      |      |      |      |       |      |       |                  |         |   |      |      |      |      |      |      |      |       |       |       |
| Unperforated               | 0.10(L)      | NC   | 0.25 | 0.15         | 0.05  | 0.05                      | 0.10 | 0.10 | 0.10 | 44 dB | 19 dB | -     |                |                 |         |                           |             |  |  |  |  |  |       |                 |             |     |     |     |      |      |      |              |         |    |      |      |      |      |      |      |      |       |       |   |                  |         |   |      |      |      |      |      |      |      |       |      |   |                  |      |   |      |      |      |      |      |      |      |       |      |       |                  |         |   |      |      |      |      |      |      |      |       |       |       |
| Rg 2516 + Fleece           | 0.75(L)      | C  | 0.35 | 0.80         | 0.95  | 0.70                      | 0.75 | 0.75 | 0.80 | 18 dB | 8 dB  | -     |                |                 |         |                           |             |  |  |  |  |  |       |                 |             |     |     |     |      |      |      |              |         |    |      |      |      |      |      |      |      |       |       |   |                  |         |   |      |      |      |      |      |      |      |       |      |   |                  |      |   |      |      |      |      |      |      |      |       |      |       |                  |         |   |      |      |      |      |      |      |      |       |       |       |
| Rd 1522 + Fleece           | 0.70         | C  | 0.30 | 0.65         | 0.90  | 0.65                      | 0.70 | 0.75 | 0.70 | 16 dB | 6 dB  | 16 dB |                |                 |         |                           |             |  |  |  |  |  |       |                 |             |     |     |     |      |      |      |              |         |    |      |      |      |      |      |      |      |       |       |   |                  |         |   |      |      |      |      |      |      |      |       |      |   |                  |      |   |      |      |      |      |      |      |      |       |      |       |                  |         |   |      |      |      |      |      |      |      |       |       |       |
| Rg 0701 + Fleece           | 0.55(L)      | D  | 0.45 | 0.70         | 0.70  | 0.55                      | 0.55 | 0.45 | 0.65 | 21 dB | 10 dB | 22 dB |                |                 |         |                           |             |  |  |  |  |  |       |                 |             |     |     |     |      |      |      |              |         |    |      |      |      |      |      |      |      |       |       |   |                  |         |   |      |      |      |      |      |      |      |       |      |   |                  |      |   |      |      |      |      |      |      |      |       |      |       |                  |         |   |      |      |      |      |      |      |      |       |       |       |
| <b>Fire reaction</b>       |              | Euroclass <b>A2-s1, d0</b> as per EN 13501-1   |      |              |       |                           |      |      |      |       |       |       |                |                 |         |                           |             |  |  |  |  |  |       |                 |             |     |     |     |      |      |      |              |         |    |      |      |      |      |      |      |      |       |       |   |                  |         |   |      |      |      |      |      |      |      |       |      |   |                  |      |   |      |      |      |      |      |      |      |       |      |       |                  |         |   |      |      |      |      |      |      |      |       |       |       |
| <b>Light reflectance</b>   |              | <b>up to 87%</b>   |      |              |       |                           |      |      |      |       |       |       |                |                 |         |                           |             |  |  |  |  |  |       |                 |             |     |     |     |      |      |      |              |         |    |      |      |      |      |      |      |      |       |       |   |                  |         |   |      |      |      |      |      |      |      |       |      |   |                  |      |   |      |      |      |      |      |      |      |       |      |       |                  |         |   |      |      |      |      |      |      |      |       |       |       |
| <b>Humidity resistance</b> |              | <b>90% RH</b>  |      |              |       |                           |      |      |      |       |       |       |                |                 |         |                           |             |  |  |  |  |  |       |                 |             |     |     |     |      |      |      |              |         |    |      |      |      |      |      |      |      |       |       |   |                  |         |   |      |      |      |      |      |      |      |       |      |   |                  |      |   |      |      |      |      |      |      |      |       |      |       |                  |         |   |      |      |      |      |      |      |      |       |       |       |
| <b>Clean room</b>          |              | <b>ISO 1</b> class for METAL Board 600 x 600 mm<br><b>ISO 3</b> class for METAL Q-Clip / METAL Q-Clip F 600 x 600 / 625 x 625 mm<br><b>ISO 5</b> class for METAL R-Clip F 1200 x 600 mm  |      |              |       |                           |      |      |      |       |       |       |                |                 |         |                           |             |  |  |  |  |  |       |                 |             |     |     |     |      |      |      |              |         |    |      |      |      |      |      |      |      |       |       |   |                  |         |   |      |      |      |      |      |      |      |       |      |   |                  |      |   |      |      |      |      |      |      |      |       |      |       |                  |         |   |      |      |      |      |      |      |      |       |       |       |
| <b>Indoor air quality</b>  |              | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <br/>A+         </div> <div style="text-align: center;"> <br/>E1         </div> </div>   |      |              |       |                           |      |      |      |       |       |       |                |                 |         |                           |             |  |  |  |  |  |       |                 |             |     |     |     |      |      |      |              |         |    |      |      |      |      |      |      |      |       |       |   |                  |         |   |      |      |      |      |      |      |      |       |      |   |                  |      |   |      |      |      |      |      |      |      |       |      |       |                  |         |   |      |      |      |      |      |      |      |       |       |       |
| <b>Cleanability</b>        |              |  |      |              |       |                           |      |      |      |       |       |       |                |                 |         |                           |             |  |  |  |  |  |       |                 |             |     |     |     |      |      |      |              |         |    |      |      |      |      |      |      |      |       |       |   |                  |         |   |      |      |      |      |      |      |      |       |      |   |                  |      |   |      |      |      |      |      |      |      |       |      |       |                  |         |   |      |      |      |      |      |      |      |       |       |       |
| <b>Sustainability</b>      |              | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <br/>EN ISO 14021<br/>≈14%         </div> <div style="text-align: center;"> <br/>cradle to cradle<br/>Silver*         </div> </div>  |      |              |       |                           |      |      |      |       |       |       |                |                 |         |                           |             |  |  |  |  |  |       |                 |             |     |     |     |      |      |      |              |         |    |      |      |      |      |      |      |      |       |       |   |                  |         |   |      |      |      |      |      |      |      |       |      |   |                  |      |   |      |      |      |      |      |      |      |       |      |       |                  |         |   |      |      |      |      |      |      |      |       |       |       |
| <b>Design options</b>      |              | <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <br/>Dimensions         </div> <div style="text-align: center;"> <br/>Colours         </div> <div style="text-align: center;"> <br/>Perforations         </div> <div style="text-align: center;"> <br/>Acoustic Infills         </div> <div style="text-align: center;"> <br/>Cut-Outs         </div> </div>  |      |              |       |                           |      |      |      |       |       |       |                |                 |         |                           |             |  |  |  |  |  |       |                 |             |     |     |     |      |      |      |              |         |    |      |      |      |      |      |      |      |       |       |   |                  |         |   |      |      |      |      |      |      |      |       |      |   |                  |      |   |      |      |      |      |      |      |      |       |      |       |                  |         |   |      |      |      |      |      |      |      |       |       |       |

Product availability may vary from country to country. Please contact your local sales representative.  
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