



Warsaw, 23-12-2024

**Carboline Polska Sp. z o.o.**  
**29, Słoneczna St.,**  
**PL 83-021 Wiślina**

01232.2/22/Z00NZZ

## **Supplementary fire resistance classification to the Classification Report No. 01232.1/22/Z00NZZ: Air transfer grilles type KR and KRS in flexible and rigid wall**

### **1 FORMAL BASES**

- 1.1. Order of Carboline Polska Sp. z o. o. company.
- 1.2. Agreement No. 01232/22/Z00NZZ.

### **2 TECHNICAL BASES**

- 2.1. EN 1364-5:2017: Fire resistance tests for non-loadbearing elements – Part 5: Air transfer grilles.
- 2.2. EN 13501-2:2023: Fire classification of construction products and buildings elements – Part 2: Classification using data from fire resistance and/or smoke control tests, excluding ventilation services.
- 2.3. Test Report No. LZZP01-01232/22/Z00NZZ: Fire resistance test of air transfer grilles type KR and KRS in flexible and rigid wall supporting construction. The test was conducted 04.10.2024 in Fire Testing Laboratory of ITB in Pionki.
- 2.4. Classification report No. 01232.1/22/Z00NZZ: Fire resistance classification of air transfer grilles type KR and KRS in flexible and rigid wall.
- 2.5. Technical documentation delivered by the Sponsor (figures in Appendix 1).

### **3 TECHNICAL DESCRIPTION OF ATG**

The air transfer grilles type KR and KRS are made in accordance with technical description given in classification report No. 01232.1/22/Z00NZZ, with the following change:

- the maximum dimensions of KR and KRS air transfer grilles are as follows:
  - KR 50 air transfer grilles: maximum area 0.09 m<sup>2</sup>,
  - KRS 50 air transfer grilles: maximum area 0.09 m<sup>2</sup>,
  - KR 70 air transfer grilles: maximum area 0.09 m<sup>2</sup>,
  - KRS 70 air transfer grilles: maximum area 0.36 m<sup>2</sup>.

The details of KR and KRS air transfer grilles are presented in Figs. 1 – 4 in Appendix 1. The details of masking element are presented in Fig. 5 in Appendix.

#### 4 FIRE RESISTANCE CLASSIFICATION ACCORDING TO THE PERFORMANCE CRITERIA OF THE STANDARD EN 13501-2:2023 [2.2]

Fire resistance class air transfer grilles (ATG) type KR and KRS made in accordance with p. 3, according to the performance criteria of the standard PN-EN 13501-2:2023 [2.3] is presented in table below:

| Type of ATG | Area of the ATG (A) [m <sup>2</sup> ] | Supporting construction type | Supporting construction thickness (Th) [mm] | Fire Resistance Class |
|-------------|---------------------------------------|------------------------------|---|-----------------------|
| KR 50       | A ≤ 0.01                              | Flexible / Rigid             | 100 ≤ Th < 120                              | EI 45 / E 90          |
|             |                                       |                              | Th ≥ 120                                    | EI 60 / E 90          |
|             | 0.01 < A ≤ 0.09                       | Flexible / Rigid             | Th ≥ 100                                    | EI 30 / E 90          |
| KRS 50      | 0.01 < A ≤ 0.09                       | Flexible / Rigid             | Th ≥ 100                                    | EI 45 / E 60          |
| KR 70       | A ≤ 0.01                              | Flexible                     | 100 ≤ Th < 120                              | EI 45 / E 90          |
|             |                                       |                              | Th ≥ 120                                    | EI 60 / E 90          |
|             |                                       | Rigid                        | Th ≥ 100                                    | EI 90                 |
|             | 0.01 < A ≤ 0.09                       | Flexible / Rigid             | Th ≥ 100                                    | EI 30 / E 90          |
| KRS 70      | 0.01 < A ≤ 0.09                       | Flexible                     | Th ≥ 100                                    | EI 45 / E 60          |
|             | 0.01 < A ≤ 0.36                       | Rigid                        | Th ≥ 100                                    | EI 90                 |

#### 5 EXPIRY DATE OF THE OPINION

The supplementary classification is valid until 30<sup>th</sup> of December 2027, provided that there will be no material or structural changes in technical solutions of air transfer grilles (ATG) type KR and KRS.

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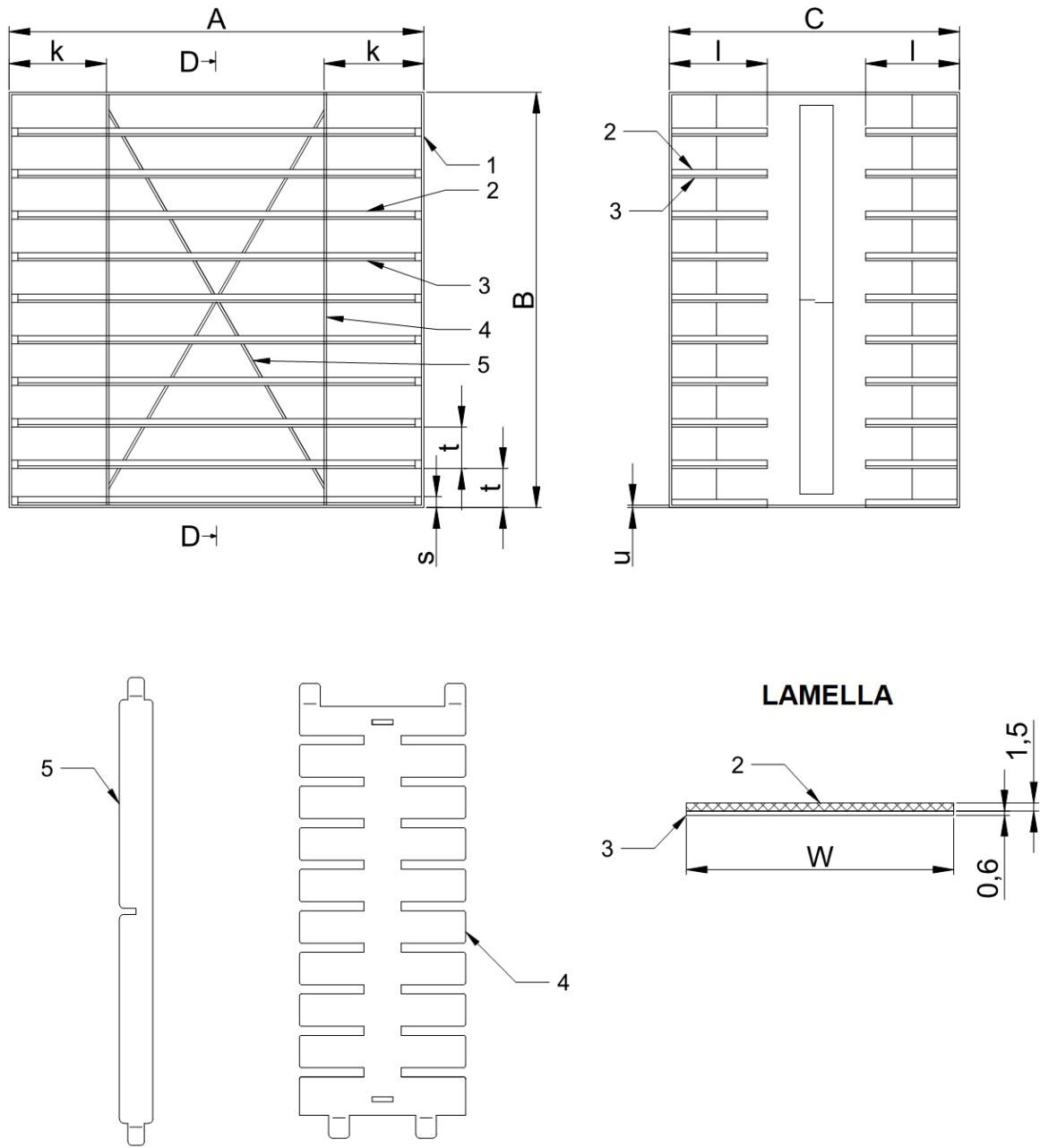
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Bartłomiej Papis,  
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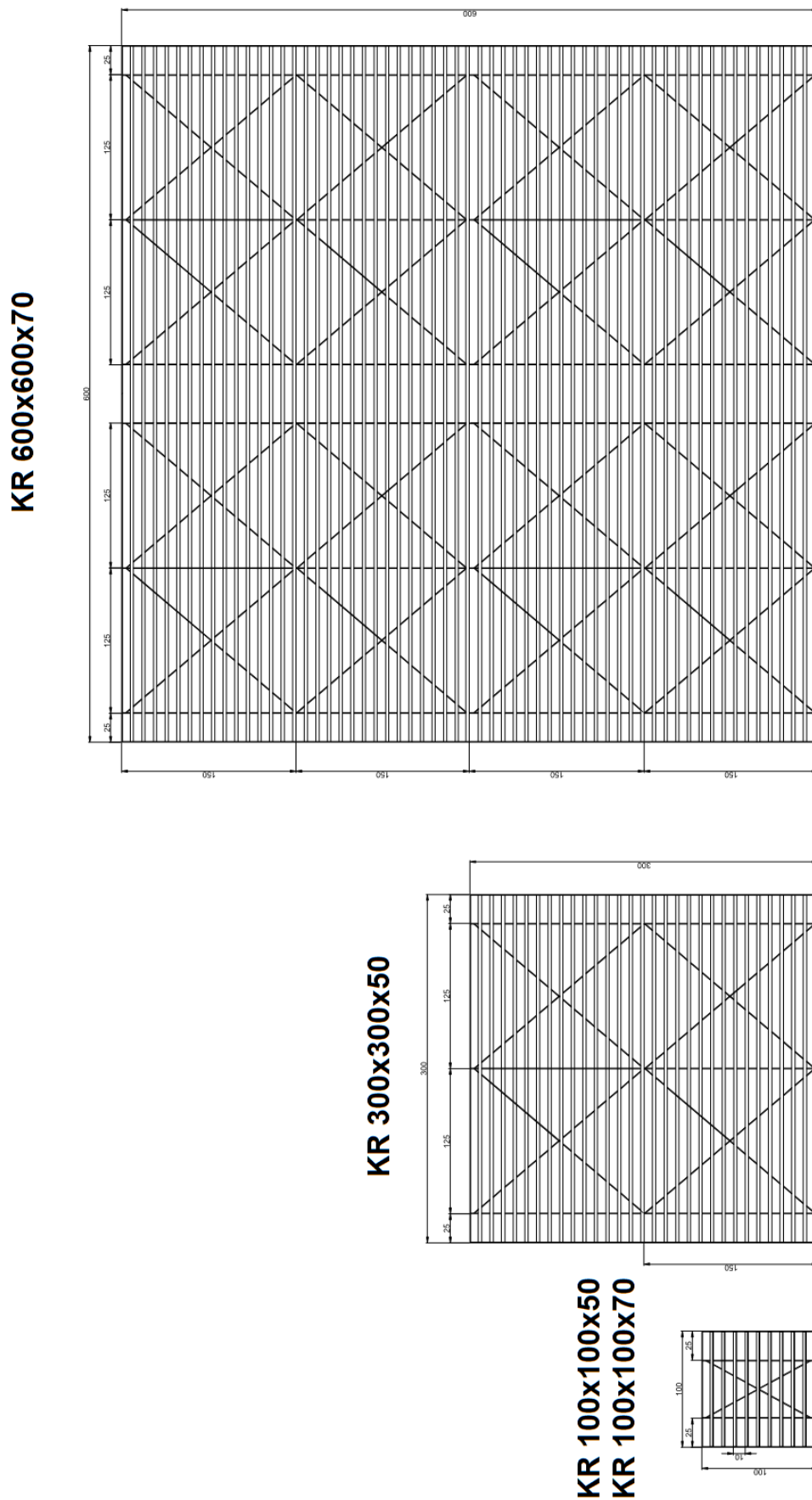
**Appendix**  
**to the Supplementary Classification**  
**№ 01232.2/22/Z00NЗP**  
**Technical Documentation**



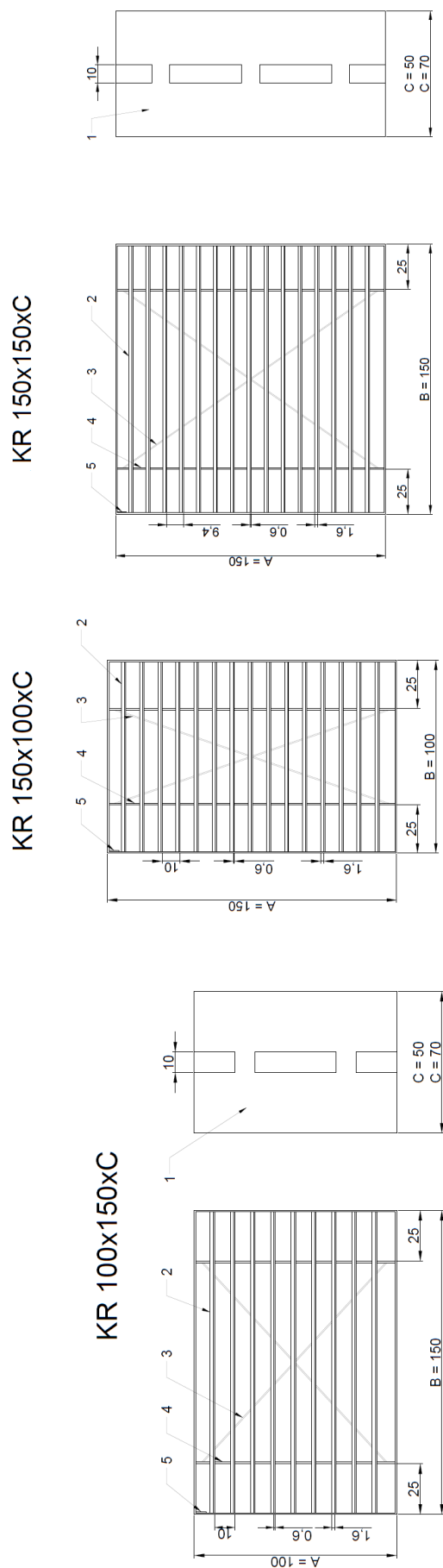
A, B, C – casing dimensions  
 s, l – intumescent gasket dimensions  
 k – stands arrangement  
 t – lamellas arrangement  
 u – steel sheet thickness  
 W – width of the lamellas

1 – steel sheet casing, thickness of 0.6 mm  
 2 – intumescent tape, dimensions of s x l  
 3 – lamella steel sheet, thickness of 0.6 mm  
 4 – stand steel sheet, thickness of 0.6 mm  
 5 – cross steel sheet, thickness of 0.6 mm

**Fig. 1** Air transfer grilles type KR and KRS (general dimensions, see tab. 1)



**Fig. 2** Examples of air transfer grilles type KR (monolithic)



\*Numbering and marking in accordance with fig. 1

**Fig. 3** Examples of air transfer grilles type KR (monolithic)

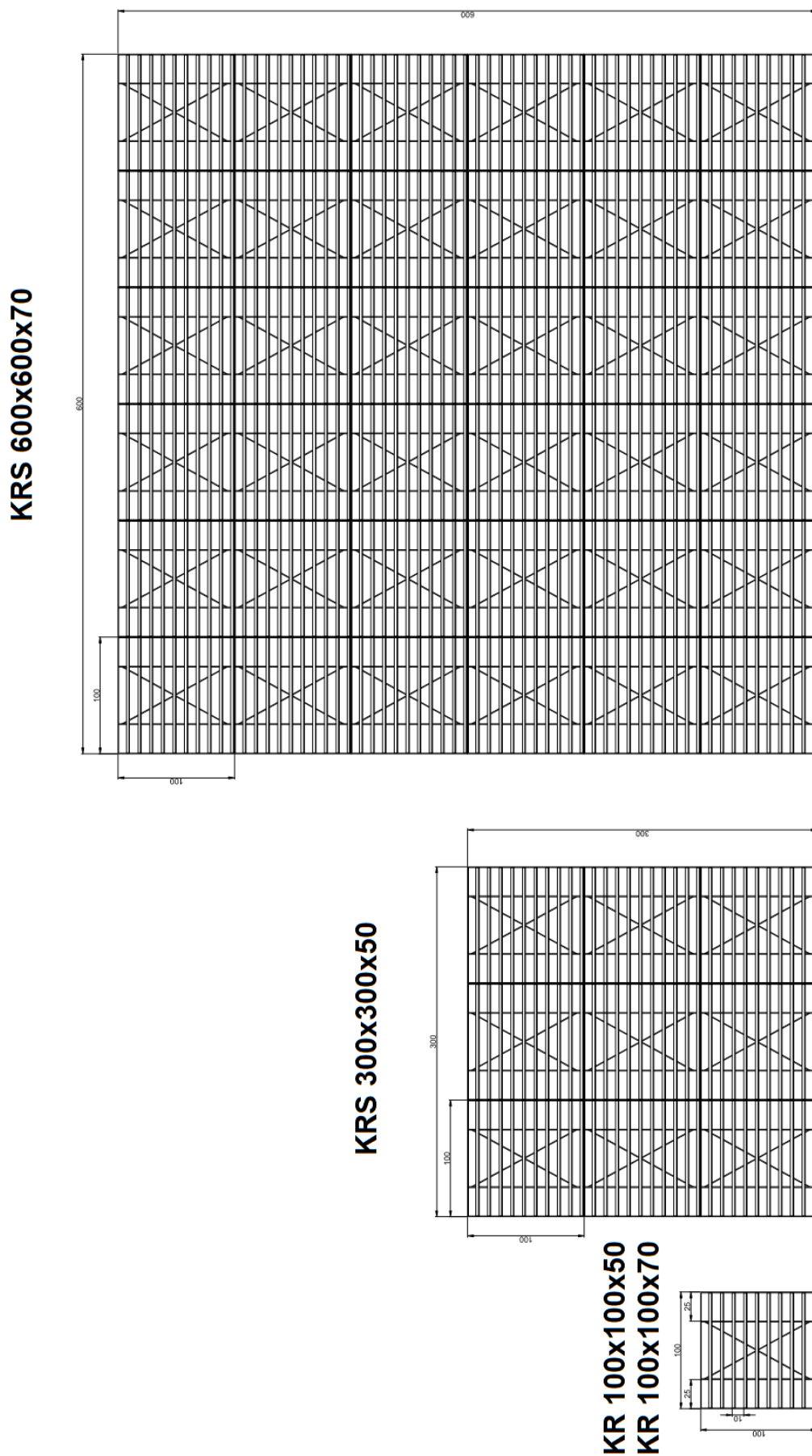
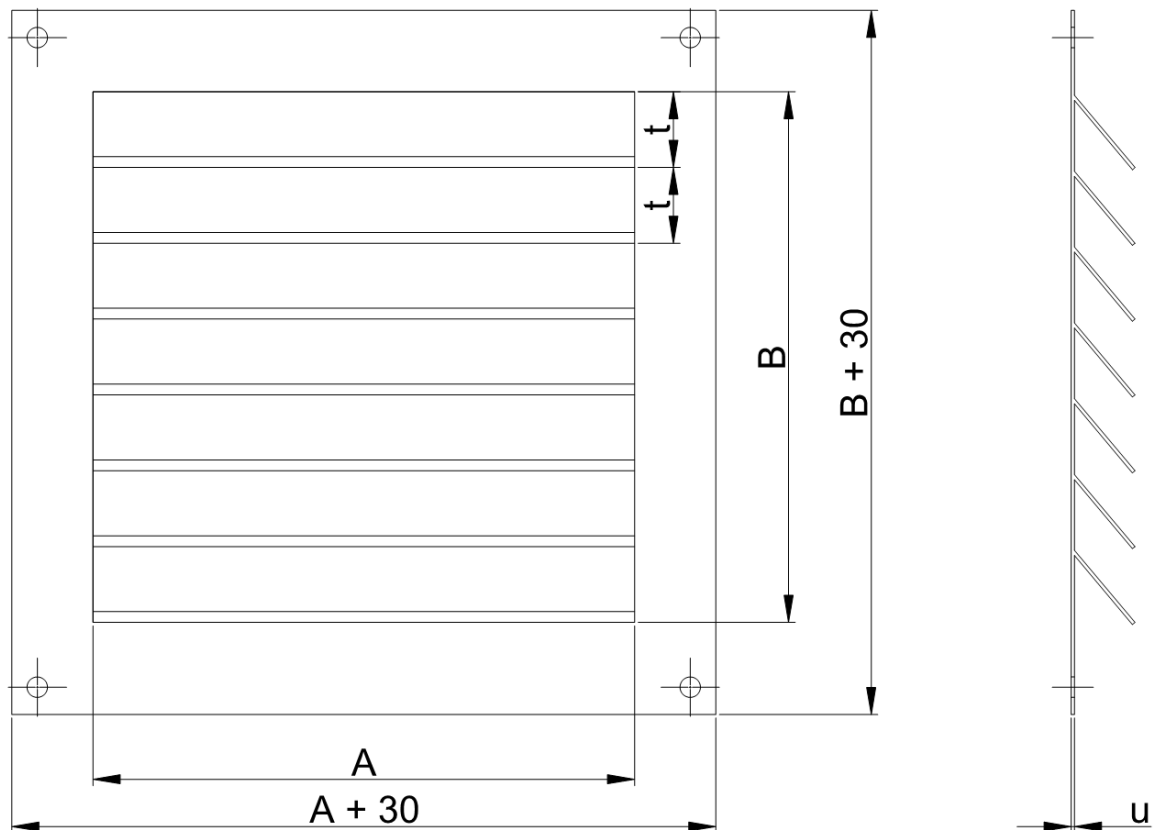


Fig. 4 Examples of air transfer grilles type KRS (composed of KR 100x100 grille)



A, B – air transfer grille casing dimensions  
 u – steel masking sheet thickness of 0.6 mm

**Fig. 5** Air transfer grille masking cover

**Table 1** Dimensions of air transfer grilles (see Fig. 1)

| Type of ATG   | Area of ATG [m <sup>2</sup> ] | u [mm] | W [mm] | k <sup>1)</sup> [mm] | t [mm] | s x l, [mm] |
|---------------|-------------------------------|--------|--------|----------------------|--------|-------------|
| <b>KR 50</b>  | $A \leq 0.01$                 | 0.6    | 20     | 25 / 50              | 10     | 1.5 x 20.0  |
| <b>KR 50</b>  | $0.01 < A \leq 0.09$          | 0.6    | 20     | 25 / 125             | 10     | 1.5 x 20.0  |
| <b>KRS 50</b> | $0.01 < A \leq 0.09$          | 0.6    | 20     | 25 / 50              | 10     | 1.5 x 20.0  |
| <b>KR 70</b>  | $A \leq 0.01$                 | 0.6    | 30     | 25 / 50              | 10     | 1.5 x 30.0  |
| <b>KRS 70</b> | $0.01 < A \leq 0.36$          | 0.6    | 30     | 25 / 125             | 10     | 1.5 x 30.0  |

<sup>1)</sup> Distance from the edge / max. distance between the adjacent stands