Assembly Instructions

Protective Grating with Anti-burglary Protection

Highend air handling components

Burglary protection

It is not enough to simply install a strong entrance door to make a building safe. Instead, the whole building must be analysed for vulnerabilities and be equipped with the appropriate components. Burglars always pick the most vulnerable point or try to force entry in more than one place. Therefore, a comprehensive security concept should be drafted for larger and more complex buildings.
Ventilation openings can be weak points in buildings for which Lucoma AG has developed two types of grating as reinforcement.

Components protecting against burglary prevent a perpetrator from getting quick access to the building. There are different levels of burglary protection, which are called resistance classes (or "RC" for short). The higher the resistance class, the longer it takes for the burglar to get inside the building or he will need special tools to accomplish this. This increases the burglar's risk of getting caught.

RC (resistance period)	Perpetrator profile	Area of application
1 N* (---)	The occasional burglar tries to get access by means of small simple tools and applying physical force, e.g. kicking, shoulder push, lifting or tearing out components.	Basic security of building parts without direct entrance at ground level.
2 N* / 2 (3 min)	The occasional burglar will also try to get access by means of simple tools, e.g. screwdriver, tweezers, wedge and small hand saws for grating elements or exposed straps.	Residential buildings Commercial buildings Public buildings
3 (5 min)	The burglar tries to get access by means of a crowbar, an additional screwdriver and hand-held tools such as small hammers, drift pins and mechanical drills.	Residential buildings Commercial buildings Public buildings
4 (10 min)	The experienced burglar additionally uses a heavy hammer, an axe, crowbar and a portable wireless drill.	Commercial buildings Public buildings
5 (15 min)	The very experienced burglar additionally uses power tools, e.g. drilling machine, hole saw and sabre saw, and an angle grinder with a disk of max. 125 mm diameter.	Commercial buildings Public buildings High security
6 (20 min)	The very experienced burglar additionally uses brick axes, high-performance power tools, e.g. drilling machine, hole saw and sabre saw, and an angle grinder with a disk of max. 230 mm diameter.	Commercial buildings Public buildings Very high security
* For RC1N and RC2N there are no requirements for glazing at the installation site. However, it is recommended to install these components only where they are hard to reach for the perpetrator. Recommendation: at least 3 m above and 1 m to the side of firm underground. Laminated safety glass of class P4A according to EN 356 should be installed for testing, however.		

Table I: according to EN I627:2OII

The specially reinforced and tested protective grating type WSG5OSK2* and protective grating type 75-SK2 of Lucoma AG holds off a burglar for more than 3 minutes and fulfils all requirements of RC2. We have developed a grating for increased protection, meeting the requirements of resistance class RC3/RC4 (see separate assembly Instructions).

The protective gratings of type WSG5OAluSK2 and type WSG75AluSK2 have been tested by an accredited testing institute in Switzerland according to the series of standards EN I627 to I63O and they meet all of the standards' requirements. We can manufacture the protective gratings made of both aluminium as well as full V2A or V4A steel.

* SK3 and SK4 stand for protection classes 2, 3 and 4, which are identical to resistance classes 3 or 4.

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Installation instructions

The gratings can only deliver the protection according to their tested capabilities if they are installed professionally. It must be ensured at the site that the performance of the installation does not cause an unexpected vulnerability of the relevant building part. Therefore, the following installation instructions must be followed by all means. In case of incorrect installation, the indicated protection capability cannot be guaranteed.

Mounting

Since every construction situation requires specific mounting material, Lucoma does not include screws or bolts in the delivery. The selection of the suitable screw fastening is within the responsibility of the planner or the executing contractor.

1. **Identify the underground onto which the protective grating is to be bolted.**

2. **Get mounting material that is suitable for the identified underground.**
   Our recommendation without commitment is:
   a. Undergrounds: concrete, brick, porous concrete or similar
   → Burglary-proof M8 screws, M8 bolt anchor, M8 anchor screws, M8 stud bolts, glued
   b. Undergrounds: wood or similar
   → M8 stair bolts
   c. Undergrounds: metal
   → Burglary-proof M8 screws, M8 threaded pins, M8 stud bolts

(Lucoma's delivery does not include any screws.)

Burglary-proof screw

Assembly Instructions

Protective Grating with Anti-burglary Protection

Protective grating installation

The protective grating is installed from the outside into the ventilation opening. The gratings must be screwed onto the underground through mounting holes (to be provided on site) into a flange with a max. spacing of 300 mm.

3. **The protective grating is installed from the outside into the ventilation opening. Ensure that no unnecessary gap (≤ 5mm) is created between the brickwork and the flange, which would make it vulnerable to leverage tools that could be applied there.**

4. **Transfer the drill holes (max. 300 mm spacing) to the flange and drill the flange holes on site.**

5. **Important! To prevent the screws from coming out (hexagonal recess, etc.), the screws must be locked. For example, by means of burglary-proof screws or a star-shaped insert for the hexagonal recess or internal hexalobular.**

Protective Grating with Anti-burglary Protection

Alternative installation by means of mounting brackets (optional)

The protective grating is installed from the outside into the ventilation opening. The gratings can be installed on mounting brackets (optional) that are welded onto the back side, i.e. the screw connection must be made from inside of the building.

6. **Insert the protective grating from the outside into the opening and fix it in place. Ensure that no unnecessary gap (≤ 5mm) is created between the brickwork and the flange, which would make it vulnerable to leverage tools that could be applied there.**

7. **Mark the drill holes directly above the welded-on mounting brackets and then drill the screw holes according to the manufacturer's information.**

8. **Important: All welded-on mounting brackets must be screw-connected.**

9. **Install the anchor bolts or the chosen screws properly through the mounting brackets.**