

## OPERATION AND MAINTENANCE MANUAL FOR 'KNAUF INTEGRAL' RAISED FLOORS

### 1. Introduction

Supplied and properly assembled raised floors of KNAUF INTEGRAL system require several basic principles to be followed to ensure their long-term and trouble-free operation. Determination of these principles is based both on analysis of properties of the used materials and on long-term operational experience and the fact that assembly of such elements as e.g. electrical junction box into the raised floor makes it an integral part of the electrical, telecommunications and IT infrastructure.

**Failure to follow the basic operational principles below may result in withdrawal of guarantee for supplied and assembled by the qualified workers raised floor, granted by the 'TIM-EX' company.**

### 2. Opening and closing of modular raised floor.

The key element of the modular raised floor are floor panels assembled on the load-bearing structure, regardless of its type, to ensure its easy raising, if necessary. Opening of any part of the floor surface by the user is necessary to perform supplementary installation works.

#### a) floor panels raising

Floor panels raising should be made only using a special sucker lift. The lift should be mounted in parallel to the edge of one of the panel sides, at the distance of app. 5 cm from its edge.

Upon slight raising of the panel, the lift is being fixed in its center to raise the panel properly. Raised panels should be arranged horizontally so that the surface and bottom sides fitted close to each other. Placing of disassembled floor panel 'on the edge' not allowed.

#### b) floor 'opening' principles

- raise the lowest possible number of panels and only these panels, raising of which is necessary
- do not make long, open 'corridors' (maximum number of raised panels in a single row may not exceed 7)
- avoid creating of 'spots' upon opening of all sides of a certain surface

- transport towards any open surface of raised floor is not allowed

#### c) raised floor closing

Upon cleaning of the stud heads of the load-bearing structure and checking whether they are equipped with plastic overlays – the panels are assembled using the sucker lift. It is

recommended to arrange the raised floor panels at the same places and in the same direction.

**NOTE! Remove and re-assemble the gres tiles with particular care, especially as their edges are not covered with protective tape. This activity is recommended to be performed using two lifts.**

### **3. Monolithic raised floor operation**

Monolithic raised floor operation consists of 1200 x 600 mm tongue and groove plasterboards adhered together and assembled on the load-bearing structure pedestals. To assemble or supplement electrical, water and sewage, IT, etc. installations in the floor void, special holes and inspection shafts, main element of which are the panels of the modular raised floor, were assumed in the design. The principles of their raising are described in Clause 2.

### **4. Covering of monolithic raised floor**

**NOTE!! Pursuant to PN-EN 13213:2002 standard, permissible deflection of raised floor should not exceed 2 mm. Therefore ensuring strict compliance with the conditions below is highly recommended!**

**Shall permissible FHB floor deflection resulting from the expected flooding will exceed the deflection resisted by the floor covering, additional protective measures should be applied.**

**NOTE!! Prior to laying of any floor covering, floor should operate for at least 7 days in target conditions!**

#### **A. Fitted carpet**

When laying fitted carpet one should ensure it is not excessively adhered ('tight') to the raised floor. Properly laid fitted carpet may be easily ripped off from the floor.

In case of any doubts that the air-conditioning system of the building ensures stable humidity and temperature conditions within the entire operational period, **expansion joints** made in the monolithic raised floor **should be projected in the fitted carpet.**

#### **B. Parquet**

Parquet should be laid 'freely' (panels) or adhere, provided that the parquet thickness must be of  $\leq 2/3$  FHB element thickness. In case of adhered parquet, follow the processing manual provided by the parquet manufacturer and by the adhesives manufacturer for the selected type of parquet.

#### **C. Ceramics, stone**

Ceramic covering such as gres, stone and terracotta, should be adhered to the floor **using only flexible adhesives** meeting the requirements of the EN 12004 standard as R2 or R2T.

The following layers may be used as an alternative for R – adhesives:

- flexible cement adhesive of S1 or S1 class according to EN 12004 standard
- separating pad e.g. UZIN Multimoll
- flexible cement adhesive of S1 or S1 class according to EN 12004 standard

To fit **stone and parquet**, the recommended thickness of a panel is at least 32 mm (Knauf Integral FHB 32 of 600 x 1200 x 32 mm dimensions), considering the recommendations provided above.

#### **D. PVC covering**

When laying the PVC covering an UZIN RR 185 mat should be placed on the FHB raised floor.

#### **E. Liquid coatings**

Liquid coatings, such as epoxy resin coatings must be flexible and vapor permeable, depending on the manufacturer.

### **5. Transport of heavy items over the raised floor**

In the case in which the floor surface is covered with fitted carpet, transport of heavy items should be performed covering the raised floor surface with plywood, particle board, steel sheets. etc. This will protect the covering of the panels against mechanical damage and distributes the load of the transported item on a greater surface. When determining the permissible dynamic load of the transported item, one should consider that it is greater from the static load by 1.4.

Also the fact that in case of rolling, the load is transferred on 2, 3 or 4 wheels of any truck, lift, stacker etc. of transport vehicle.

Value of permissible static point load of raised floor is provided by the 'TIM-EX' company in its technical brochure and offers for any specific raised floor.

### **6. Raised floor cuttings**

Any additional cuttings in the modular or monolithic raised floor may be performed by the user itself, provided that the performance method, type of tools to be used and possible necessity of assembling of additional supporting brackets should be discussed with the 'TIM-EX' company. We also recommend to commission performance of cuttings in floor panels with stone, terracotta or gres covering to the floor supplier.

### **7. Conditions in the premises with raised floors**

To avoid any damage to load-bearing panels and materials laid on them, it is necessary to maintain air temperature and humidity in the premise at the level compliant with the guidelines of PN – 78 / B – 03421 standard.

### **8. Cleaning and maintenance of raised floor**

Surface or raised floor of Knauf Integral system was impregnated, which means that it may be wet-cleaned, however provided that the aqueous cleaning agents should be removed within 30 minutes from use.

**NOTE!** In case of water system failure in the building, water spilled out on the floor surface should be removed within 30 minutes, if possible, and then enable the wet surface to dry freely.

To avoid excessive dirt of floor surface, traffic flow should be directed, if possible, via the purging sector consisting in e.g. doormats systems. Fresh stains and dirt should be cleaned

as soon as possible, whereas the floor vacuumed on daily basis using non-scratching brushes.

a) raised floor with flexible and hard coverings, i.e.:

- PVC
- rubber
- laminate
- linoleum
- stone
- gres
- parquet

- upon removing of local stains and dirt and vacuuming the surface, they may be cleaned using well-wringed mop or special devices, cleaning the surface with aqueous emulsion absorbing remaining water from floor surface. In both cases common cleaning agents (small volumes) may be added to water.

**NOTE!** Gres is a material of high hardness and resistance to abrasion, however it is not resistant to cracking and crumbling. Therefore, where using raised floor with gres tiles, particular care should be kept and dropping of hard or sharp items onto the floor, moving of furniture or heavy items should be avoided. One should also care of removing any sand remains from the floor. Periodic maintenance of gres should be performed using stone-care agents and at least once a quarter.

Apart from cleaning described above, parquet floors require no polishing agents.

b) raised floor with fitted carpet must be cleaned by vacuum-cleaner only, whereas local stains should be removed by relevant stain removers.

Excessive use of water-soluble agents or 'washing' of fitted carpet laid on the floor may result in panels' deformation and washing out of adhesives used for carpet tiles.

Take special precautions when cleaning ventilation tiles and panels with installation junction boxes. In this case, cleaning should be performed manually using soft, moistened brush, gauze, sponge, etc.

## 9. Final remarks

**The above recommendations should be perceived as basic information.**

The 'TIM-EX' company ensures its support in any case related to proper, safe and trouble-free operation of floors.

Our support covers:

- designing of floor reinforcing structure for heavy transport purposes
- supplying relevant stain removers, all types
- purchase of cleaning devise for raised floor maintenance

We provide our support in any other cases to ensure that our floors serve you best.