Introduction

This information describes the general conditions for and specification of Junckers Clip Systems for residential and commercial use.

The Clip System consists of solid boards or wide boards which are laid with metal clips over an underlay or resilient intermediate layer which gives good walking comfort and step-sound reduction properties.

Subfloor

The subfloor can be of concrete, lightweight concrete, screed and wooden materials.

Wooden subfloors of chipboard, MDF, plywood or floorboards fixed to battens or joists must be of sufficient inherent stiffness with a load bearing strength which is adequate for the use of and the expected load on the floor. The moisture content of wooden subfloors must be in balance with the relative humidity of the room, i.e. 6-12% moisture content (UK).

If several types of subfloor make up the same floorspace, the subfloor must be of uniform elasticity and flatness, to ensure that the final flooring is of a consistent nature.

Flatness of subfloor

Before intermediate layers are laid the subfloor must be levelled so that any deviations in the flatness do not conflict with the requirements of one of the two methods stated below. \( \rightarrow \) Fig. 2.

A) Traditional straight edge

The subfloor must be flat with a maximum deviation of 2 mm under a 1.5 m straight edge (UK: 3 mm under a 2 m straight edge). The surface must be smooth. Any minor irregularities must be corrected.

B) Straight edge with supports

The subfloor must be flat with a maximum deviation of ± 2 mm under a 2 m straight edge (2 mm supports). The surface must be smooth. Any minor irregularities, e.g. across day joints, must be corrected so that the maximum localised deviation from flat level is ± 0.6 mm under a 0.25 m straight edge (0.6 mm supports).

Major irregularities on concrete floors can be corrected by using a self-levelling compound. Wooden subfloors may be levelled by sanding or installing hard fibreboards, possibly combined with filler, or by laying fibrous plasterboards.

Junckers Technical Information specifies the flat level requirements of subfloors as a maximum deviation of \( 2 \text{ mm under a } 1.5 \text{ m straight edge} \). (UK: \( 3 \text{ mm under a } 2 \text{ m straight edge} \))

Intermediate layer

The intermediate layer must ensure good walking comfort and step-sound reduction properties. The stiffness of the intermediate layer must be adjusted to avoid too much movement underfoot, furniture movement, etc. due to excessive deflection when walking on the floor.

Moisture conditions, requirements of thermal insulation and any adjustment of the height of the floor structure are crucial to the final choice of intermediate layer. The Sections “Thermal insulation” and “Moisture protection” specify a number of products as follows:

- Junckers PolyFoam - a step-sound reducing underlay incorporating a moisture barrier.
- Junckers ProFelt - a step-sound reducing underlay incorporating a moisture barrier.
- Junckers Foam - a step-sound reducing underlay.
- Floor cardboard, 500 g/m²
- Flooring grade Polystyrene with densities of 30/40 kg/m³, depending on board thickness and load, see Specifier's Information.
Expansion gaps for Clip System floors

Perimeter expansion gaps at walls and fixed installations are specified in the Specifier’s Information for the floor systems.

Thermal insulation

Floating floor structures provide good conditions for thermal insulation with an intermediate layer of polystyrene. The subfloor for polystyrene can be of concrete or wooden materials. See "Moisture protection".

Moisture protection

Concrete and screeded subfloors

At ground level protection against moisture both from within the building and from the ground is required. The residual moisture in the slab is controlled by laying Junckers PolyFoam or ProFelt on the surface of the concrete. → Fig. 3. This also protects against radon penetration. The residual moisture contained in the concrete or screed must not exceed 90% RH (UK: Concrete moisture max. 75% RH acc. to BS 8201, when checked by measurement).

The PolyFoam/ProFelt has to be turned up at walls till upper edge of the floor.

On upper floors it is also recommended to lay Junckers PolyFoam or ProFelt. In connection with renovation, however, where there is no risk of moisture from the building or subsequent penetration of moisture from damp or unheated rooms, JunckersFoam can be laid instead. In this case the maximum residual moisture in the concrete should not exceed 50% RH, which is checked by measurement.

Where polystyrene boards are laid and there is a risk of moisture seeping up from below, a moisture barrier is laid on the polystyrene board. Due to the possible damage from the clips, use a strong 0.20 mm PE membrane or 1000 g Polythene.

Wooden subfloors

JunckersFoam is used as an intermediate layer directly on the wooden subfloor, → Fig. 4.

On wooden subfloors above ventilation spaces Junckers PolyFoam or ProFelt can be used as an intermediate layer, providing that the space is ventilated effectively to the outdoors and that the underside of the insulating layer is open to diffusion. If the ventilation space is damp, a moisture barrier must be laid, e.g. 0.20 mm PE membrane on the floor of the ventilation space, → Fig. 5.

Fig. 3 – Cross-section of floor on concrete subfloor

Fig. 4 – Cross-section of wooden floor

Fig. 5 – Cross-section of floor structure across ventilation space at outside wall