PAPSILENT
FLOORING UNDERLAYS

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Requirements for underlay materials

The associations EPLF and MMFA define many requirements for underlays of laminate, vinyl and design flooring. The essentials are summarized here.

Noise reduction

Impact sound reduction (IS)

The noise of footsteps transmitted to the room below is known as impact sound. In combination with the subflooring, underlays with a high IS value (impact sound reduction) can significantly reduce impact sound.

Minimum requirement / Elevated requirements

	EPLF	MMFA
IS	≥ 14 dB ≥ 18 dB	≥ 10 dB / ≥ 18 dB

(Note: A noise level reduction of 10 dB corresponds to a 50 % reduction of the loudness perceived by the human ear)

Reflected walking sound reduction (RWS)

Walking noise heard in the same room is known as reflected walking sound. Suitable underlays can noticeably reduce reflected walking sound. The test standard for determining so-called RWS values is still in development, so no generally accepted test method is available yet. Once the new test standard is issued, specific recommendations for minimum requirements can be given. Nevertheless, today it can be said that the higher the RWS value (reflected walking sound reduction), the better.

Usage requirements

Protection against loading (CS)

Everyday use places stress on floor systems. Underlays must be able to withstand certain levels of stress throughout the entire service life:

CS: Temporary stress caused by heavy loads

Minimum requirement / Elevated requirements

	EPLF	MMFA
CS	≥ 10 kPa / ≥ 60 kPa	≥ 200 kPa / ≥ 400 kPa

Conformability (PC)

Hollow spots due to unevenness must be avoided to protect the floor from stress and to provide better acoustics. The underlay should be able to level out small localized irregularities such as screed granules on the substrate. The higher the PC value (localized conformability), the better the levelling capacity.

Minimum requirement

	EPLF	MMFA
PC	≥ 0.5 mm	≥ 0.5 mm

Permeability to water and heat

Protection against moisture (SD)

On mineral surfaces, moisture protection is mandatory to prevent damage to the flooring. Protection against rising damp can be provided with an additional vapour control layer or with an appropriately equipped underlay. The higher the SD value (water vapour diffusion resistance), the lower the vapour permeability.

Minimum requirement

	EPLF	MMFA
SD	≥ 75 m	≥ 75 m

Heated floors / Cooled floors (Rλ,B)

Laminate flooring is generally suitable for use on heated and cooled floors. To ensure efficient performance of the underfloor heating system, the underlay should provide the least possible thermal insulation, so that the combined thermal resistance of the underlay and the laminate flooring (Rλ,B) remains as low as possible.

Maximum allowed R value of the total floor system

	EPLF	MMFA
Heated floors R	≤ 0.15 m² K/W	≤ 0.15 m² K/W
Cooled floors R	≤ 0.10 m² K/W	≤ 0.10 m² K/W

Source: European Producers of Laminate Flooring (EPLF), Multilayer Modular Flooring Association (MMFA)