The National Standard for the acoustical performance in Hungary in case of residential and public buildings for separating floors (MSZ 15601-1:2007)

Airborne-sound:

Weighted sound **R**eduction index:
Minimum / standard: $R'_w + C \geq 51$ dB
Increased / high level: $R'_w + C \geq 54$ dB

The index is modified by a floating floor by 0-3 dB only, therefore slab construction with adequate airborne-sound insulation has to be used!

Possible solutions:

- monolithic reinforced concrete slab (min. 18 cm thickness)
- concrete formwork slab panel (eg. Leier)
- in case of slab with beams (half-monolithic (eg. Porotherm, Fert or Leier mesterfödém), or fully prefabricated ('E' or 'PPB' type)) and hollowcore slab panel minimum 10 cm(!) concrete is required because of their smaller weight (app. 18 cm reinforced concrete slab is required or app. with the same weight: minimum 400-450 kg/m^2)

Impact noise sound:

Impact sound pressure **L**evel:
Minimum/standard: $L'_{nw} + C \leq 55$ dB
Increased/ high level: $L'_{nw} + C \leq 52$ dB

The impact noise sound insulation requirement can be fulfilled by floating floors. The impact noise improvement of a floating floor depends on the quality of the floating layer and the thickness of the subconcrete (generally ΔL_w = 20-35 dB). The floating floor can be covered by any floor covering. In case of residential buildings contact floor with cold covering is never sufficient!

Impact noise improvement needed:

$\Delta L_{w\ need} = L_{nw1} - L_{nwk} + K$ [dB]

L_{nw1} – the characterized noise suppression level of the slab without any floor covering, measured in laboratory (impact sound pressure level)
L_{nwk} – requirement in the standard
K - correction, modification

Type of building	Type of slab construction	L_{nw1} [dB]	requirement L_{nwk}[dB]	improvement need ΔL_{wneed} [dB]
Residential building, separating floors	"E" beam type + 5cm subconcrete	80	55 52	80-55+3=28 dB 80-52+3=31 dB
	Porotherm + 6 cm subconcrete	87	55 52	87-55+3=35 dB 87-52+3=38 dB
	20 cm reinforced concrete	75	55 52	75-55+3=23 dB 75-52+3=26 dB