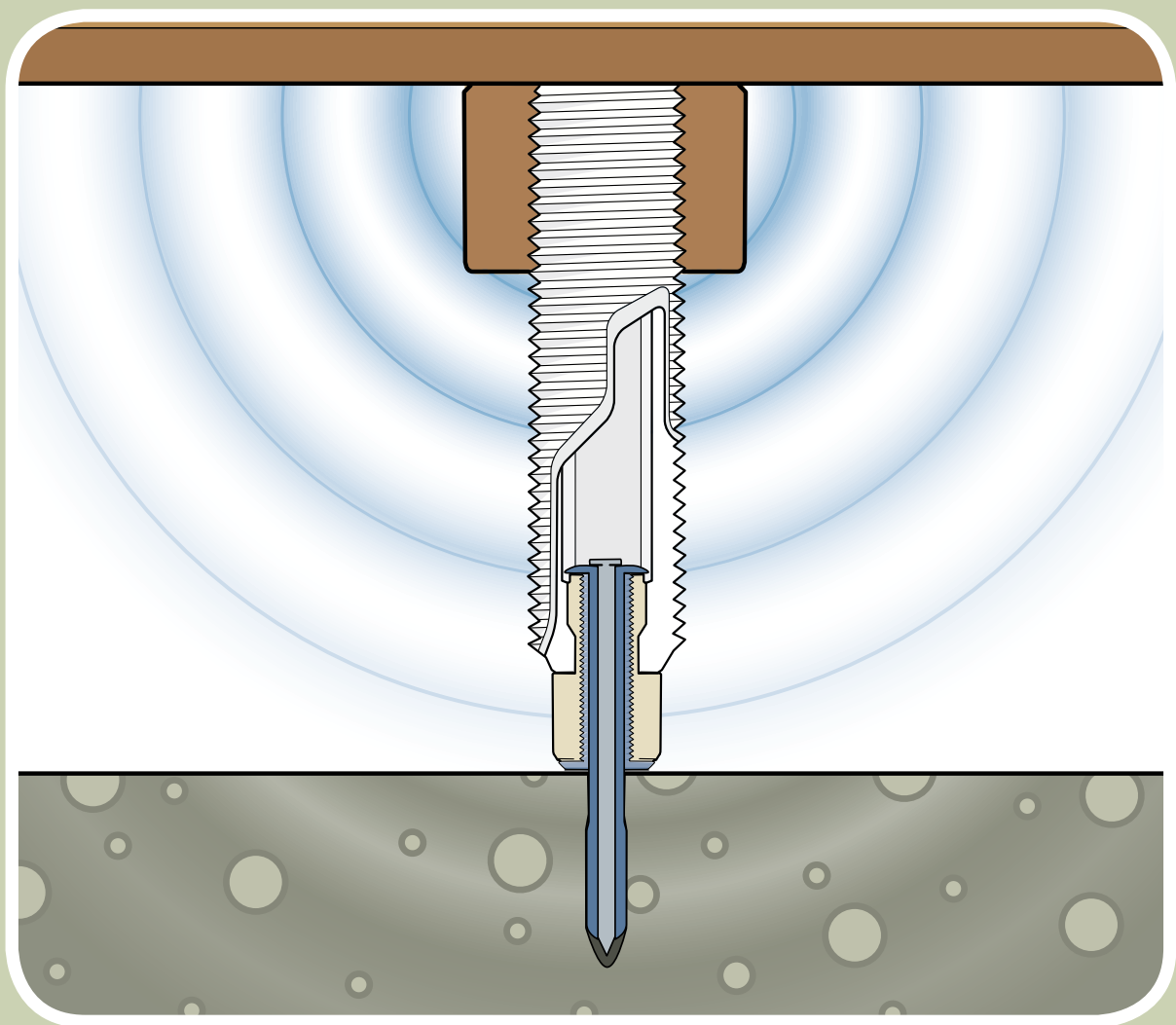


Simple • Safe • Flexible

Binder 11 BSAB 83 H5 BSAB 96 HSD



There's only one joist that counts



# Acoustics

Acoustic flooring



SITAC



1422

Patent no. 9302270-5  
Environmental product declaration.

Type approval no. 1255/97, 0469/01  
Fulfills the requirements of Sweden's Environmental Code; best technology.

[www.nivellsystem.se](http://www.nivellsystem.se)

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# Acoustics

# Nivell System

## Stricter environmental requirements

In recent years, Sweden's parliament has used the Environmental Code to stiffen the requirements imposed in respect of the environment. A good indoor environment is one of the areas to have been put in the spotlight.

## Satisfying the requirements

There are many existing systems and traditional technical solutions that find it difficult to satisfy new requirements and laws. In other cases modifications or replacements are required. Nivell System meets the demands of the Environmental Code and in order to meet possible future requirements, the company runs a continuous development programme. Nivell System has been specially developed for floors on uneven surfaces, floors with damp and odour problems and floors that are subject to a noise reduction requirement.

## Human health

The Environmental Code uses the term "detriment to human health". This covers everything from purely medical irregularities to phenomena that are not directly hazardous to health such as lasting odours.

## The "precautionary principle" and rules of consideration

The so-called precautionary principle applies to human health. It means that if there is a risk it should be avoided. In implementing these precautions, what are popularly known as the rules of consideration apply.

In this context, one of the important rules governing professional activities is the "best possible technology" principle. Professional activities is here taken to include all property ownership over and above that for the owner's residential purposes. Other rules of consideration are the product selection or replacement principle, the economy principle, the ecocycle principles and the reasonableness assessment.

## Best possible technology

The best possible technology principle, which relates both to the technology employed and also to the design of an installation, raises further requirements that have to be satisfied. Additionally, the technology must be capable of implementation – it must not be experimental. In other words, it has to be available.

**Nivell System satisfies  
all these requirements**

## Areas of application

- **Environmental rehabilitation** of floors affected by damp, mould, emissions or radon.
- **Noise reduction** floors that satisfy the strictest sound insulation requirements.
- **"Installation floors"** for pipe and cable runs, etc.
- **Sportsfloors**, gymnastics, games, activities, i.e. floors where impact absorption is important.
- **Industrial floors** subject to strict requirements as regards evenness and load-bearing capacity.
- **New builds** for rapid drying of construction moisture.
- **Combinations**, Nivell standard floors or acoustic flooring in combination with Nivell floor ventilation are efficient and popular solutions when converting, for example, old industrial properties with contaminated subfloors into homes and offices. Furthermore, the space below the joists is excellent for installations (water and electricity services, etc.). The combination of Nivell acoustic flooring and Nivell floor ventilation is also a rational choice in new builds with a high moisture content in the subfloor. This also applies to buildings with prefabricated HDF subfloors.

## The entire system is type approved, certificates 1255/97 and 0469/01

*i.e. = tested in accordance with the rules of the National Board of Housing, Building and Planning. ([www.boverket.se](http://www.boverket.se))  
(Certification does not cover PP joists. These are made from recycled material and are consequently difficult to define.)*

Screws, wooden joists and other Nivell System components have all been comprehensively tested, as have floor construction, ventilation and noise reduction. The type approval covers the entire system. This provides us with a competitive edge and the user with security.

Airtightness	BBR	6:255
General moisture	BBR	6:51
Moisture safety	BBR	6:53
Durability	BKR	2:13
Shape stability	BKR	2:121
Load-bearing capacity	BKR	3:41
Noise reduction properties BBR	7	
Type approval certificates 1255/97, 0469/01		

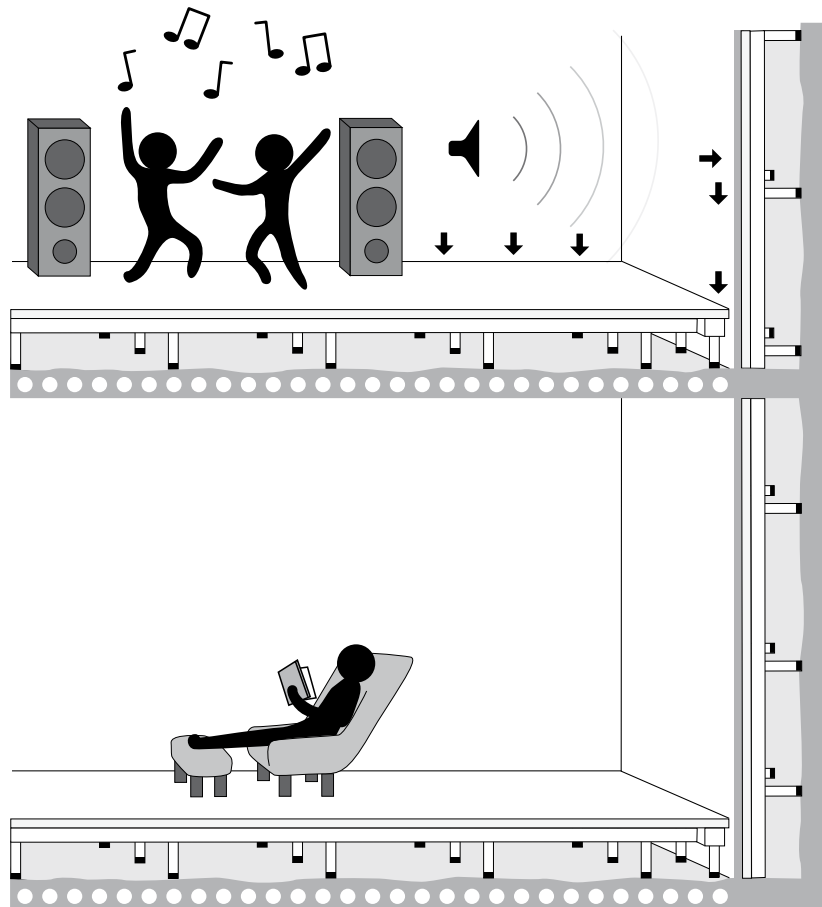
BBR = the building regulations of the National Board of Housing, Building and Planning.  
BKR = the design regulations of the National Board of Housing, Building and Planning.

## Nivell Training/Information

Every week, training is given at a selection of the country's Nivell distributors. The courses go through the laying of joists, factors to bear in mind, ventilation of floor voids, noise reduction of subfloors, certain rules of thumb, etc. The number of Nivell trained people is constantly growing. Contact your nearest distributor if you would like to attend one of the courses.

*Nivell System reserves the right to change specifications and designs without warning. Reservation is also made in respect of possible printing errors.*

# Silence – something that everybody is searching for



## Today

Besides natural sounds, today we have devices that are manufactured in order to make sounds. We buy sound. At the same time there is an ever greater need for peace and real rest. It is clear that sound plays a major role.

Nivell system's unique floor structure and its recognised acoustic properties contribute to and satisfy the need for a pleasant, quiet indoor environment for users.

## Silence is more and more coveted

Progress marches on, people are working more and more, including from home, and silence is becoming ever more sought after.

One of the qualities people put the most value on in their homes is quietness.

The bar is being raised for what is considered to be a soundproof house. Planning for higher noise requirements adds more value to a building than the installation costs.

## More stringent requirements in the Environmental Code

In recent years good indoor environment has come more and more into focus. Sweden's parliament has used the Environmental Code to stiffen the requirements imposed in respect of the environment.

Nivell System is contributing to meeting these requirements in the form of a completely modern system for dealing with noise problems in the floor structures of buildings.

## Buildings with noise reduction requirements

Applies above all to multi-story buildings which require noise reduction in intermediate floors, loft conversions or in conjunction with connected base slabs in, for example, terraced houses.

However, requirements for noise reduction, or the desire for it, can be present in considerably more cases, for example in activity halls, preschools etc.

Our acoustic flooring improves the level of impact sounds in concrete floor structures by 21-28 dB (depending on surrounding conditions)

# Why does it work so well?

## Interaction

Nivell System acoustic flooring has been designed and tested to interact with the entire building under actual conditions.

## Progressive spring system

The bushing of the acoustic screws is designed so that its elastic capacity is progressive at the same time as it reduces swaying movements. In unloaded floors there is a considerable capacity for elasticity and for muffling sound. When the load is increased the capacity for elasticity is diminished, and the floor stiffens in order to deal with the load at the same time as the increased bulk provides improved noise reduction. The measurement values that Nivell System reports are for unloaded floors. A furnished floor gives better measurement values.

## Lateral stability

Nivell System acoustic flooring is attached to the subfloor by means of acoustic screws with a sleeve through the

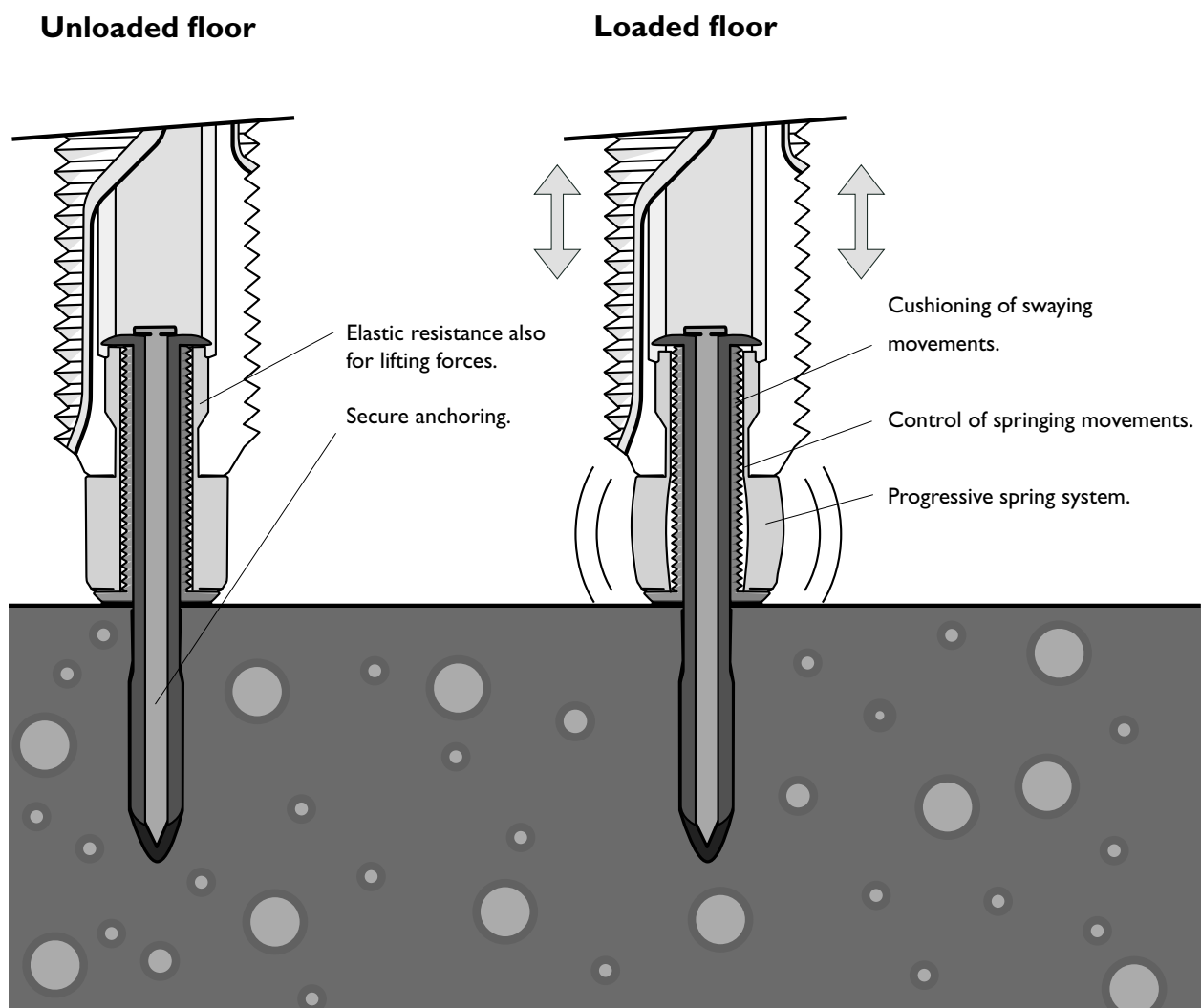
rubber bushing. This fastening ensures that the floor's movements are solely in a vertical direction. As a result of the properties and design of the rubber bushings, the elastic motion is subdued to such an extent that the flexibility in the floor is barely noticeable. It is a pleasant feeling.

## Optimal distribution

It is worthwhile checking over the building's peripheral structures in order to achieve an optimum return on the measures to reduce noise.

## Stability, sound insulation and load-bearing capacity

Nivell System has selected a design that takes into account stability, sound insulation and load-bearing capacity. The result is a floor with extremely good sound insulation that is simultaneously stable/with no swaying and meets the load requirements.



# Acoustic dispersion

Airborne sounds from, for example, speech or a hi-fi system, can be spread through gaps or other similar sound leakage points or it can make elements of the building oscillate, feeding through to the building's frame. Sound can also be produced in direct relation to a construction element, impact sounds for instance. The last link in the route that sounds take to the ear are airborne sounds.

The lower floor structure in the large picture shows an ordinary 1960s construction in which the precast subfloor has been levelled with sand and topped with special mortar. In the picture's top floor, the self-levelling sand and mortar is replaced by Nivell System acoustic flooring. However, the construction of these buildings can mean that to some extent sounds can be transmitted through walls and on-ward out into the supporting frame. Curbing impact sounds is usually the major acoustic improvement in noise reduction in these buildings.

## Prerequisites

Nivell System acoustic flooring contributes to one of the prerequisites that are needed in order to achieve a quiet building. For the system's noise reducing properties to provide the greatest benefit, it pays to consider how the installation is to be carried out and to ascertain where the sensitive points for sound transmission might be in the building.

Cracks in the floor structure or in other places can transmit more noise than you might think. A small round hole is not as critical. All leakage points must be sealed.

## Installation lead-throughs

Sound transmission via defects such as poorly sealed installation lead-throughs or through liquid in ducts and heating pipes can diminish the end-result.

## Floor before intermediate walls

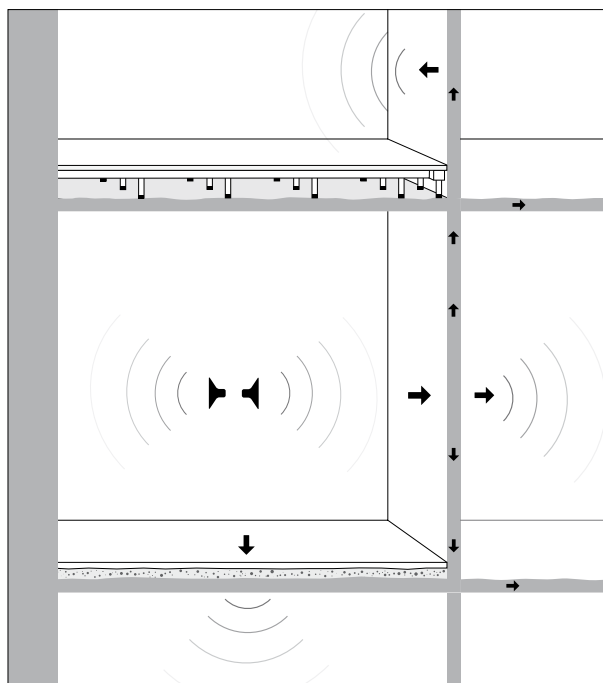
There are several advantages in laying the floor inside the apartment before installing intermediate walls. It is easy to lay installation services in the floor void, installation is quicker and you have a platform to work on during the rest of the construction period. In addition, a contiguous floor panel helps to disperse sounds over a larger area, producing less noise for neighbours.

NB! Walls dividing apartments are situated on the concrete arch.

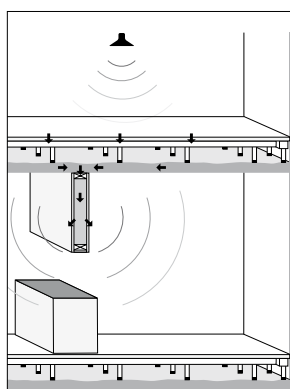
**Contact Nivell System on phone no.  
+46 500-46 98 76 for suggestions for designs  
that meet your sound requirements.**

## Acoustic testing

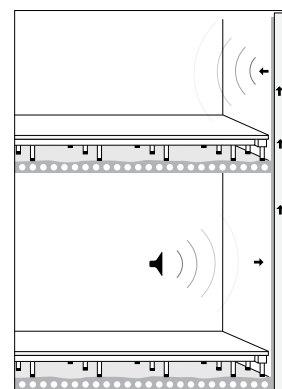
The regulatory noise requirements must be met in the finished building. Noise bleed due to poor seals, installation lead-throughs and ducts, etc. can have a negative impact on the final results. Thus, to record the framework's acoustic characteristics before laying of the Nivell floor begins, it is advisable to test the basic structure. The optimum solution is to contact us early in the project, preferably at the planning stage. Our collaborative partners/acoustic engineers will pass on the company's expertise. They can also help with professional advice and acoustic testing.



*Sounds from the framework can limit the effect of airborne-sound insulation in the floor structure.*



*Light walls can act to reinforce sound transmission.*



*Light facades can limit acoustic insulation between floors.*

# Construction examples

## Framework

Always take account of flanking transmission in the frame system. If possible secure light walls into the floor structure so that momentary forces in conjunction with downward deflection of the subfloor are not transferred to the wall panels. One way this can be implemented is by using the TM plank and Nivell's acoustic screws. See figure A on page 8.

## Sealing joints

The subfloor slabs must be sealed together in a durable manner so that shrinkage cracks etc. do not become continuous and thus have the capacity to mar the acoustic insulation in the concrete floor structure.

## Installation of double joisting

The system's type approval meets the standard for dwellings = load group 1 as per BKR. A fully laden bookcase or similar can entail a locally higher loading, which should be taken into account. Double joisting should therefore be installed along the walls that run down to the subfloor and be positioned in parallel with the other joist installation.

- Install **the first** framing joist with a 60 mm gap to a wall.
- Install **the second** framing joist at a distance of 300 mm to the first framing joist.

## Joist installation under intermediate walls

If joists run parallel to intermediate walls, carry out the installation so that one joist is always positioned beneath intermediate walls. It may be necessary to install an additional joist under intermediate walls if the other joists are distributed in a way that does not correspond to the position of the intermediate wall.

When the joist installation runs at 90 degrees to intermediate walls they act as joists under intermediate walls. In some cases it is an advantage to use the system's TM plank. With its double rows of screws it is designed to provide support under intermediate walls. Its width also supports the floor panel outside the wall as well as thresholds in doorways.

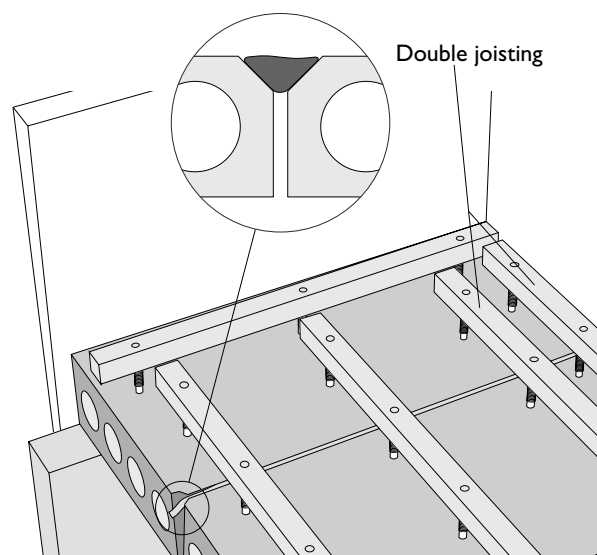
## Radiator installations

Radiators over each other on the same stem can be limited to sound class C.

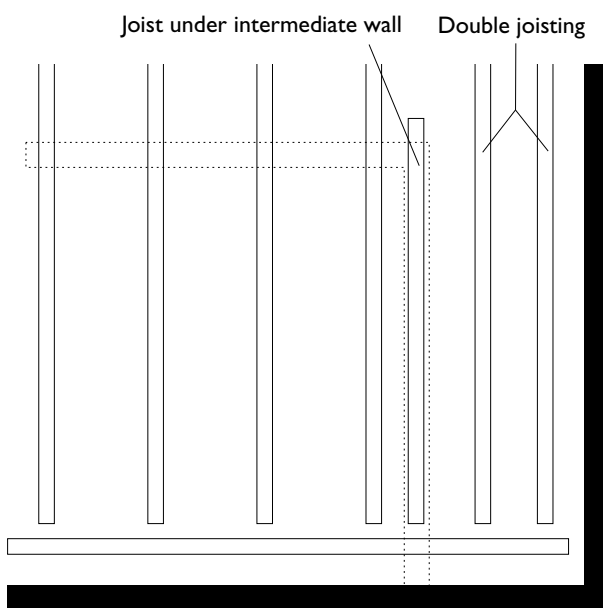
Best results are achieved if the heating pipes are routed underneath the Nivell floor into a service duct. All installations in the floor must be secured at the subfloor so that they do not get jammed, or in a position where noises arise on contact with the floor. All surplus material from the installation must be cleared away.

## It is important to check:

- That all screws are firmly secured in the subfloor with no play, and that they are intact.
- That every joist can be gently bent laterally (approx. 15°) in each direction and that no sounds arise.
- That all joists are placed apart from each other and from walls.
- That the self-inspection plan has been completed and signed (see page 13). You can also read about joint installation and tools in the "Construction" brochure.
- The floor structure must be vacuumed.



*All cracks and gaps in the floor structure must be sealed.*



# Construction examples

## Fixing in ceilings and walls

Nivell System acoustic screws can be used to advantage to secure intermediate walls in walls and ceilings that are firmly attached to the frame. Lightly pre-tighten the screws a half turn.

## Contiguous floor paneling

Ensure that a joist is located underneath any intermediate wall that is positioned in the same direction as the joist installation. It might be necessary to install additional joists if the location of the intermediate wall does not correspond with the distribution of joists. Always screw and glue the intermediate wall's sill against the floor paneling. Both floor paneling and intermediate wall are now contributing to noise reduction as they are acoustically separated from the frame.

## Acoustic sectioning (individual rooms)

Sometimes a few rooms within an apartment might need to be acoustically insulated, for example, bedrooms or rooms where a washing machine with a spin drier are located. In locations where there is a reasonable sound insulation requirement it is normally sufficient to cut the floor paneling beneath intermediate walls. However, make sure that both sides of the floor panel are supported by the joist. Use double joisting or a TM plank.

## Acoustic sectioning (strict requirements)

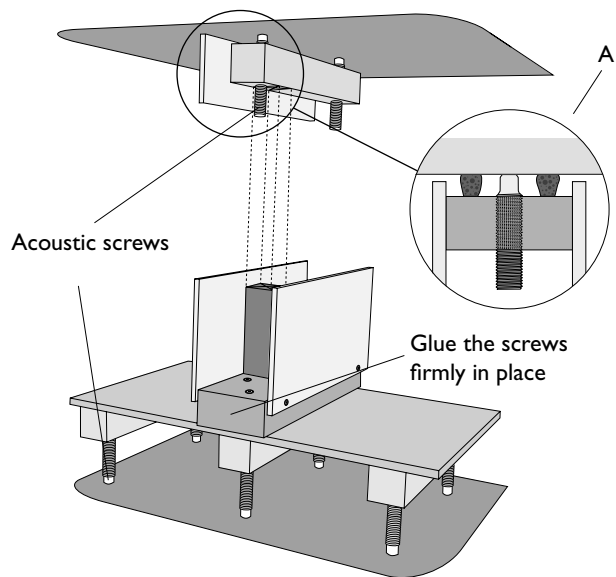
Position double joists under intermediate walls. There should be a gap of a few mm between the joists so that the sawblade can run freely when the floor panel is cut. Lay insulation on insulation carriers with an approximate width under the wall of 600 mm.

If the floor is to have negative pressure ventilation, the air gap between insulation and subfloor must be min. 10 mm. (Ensure that the insulation carriers move freely against the adjacent joists.)

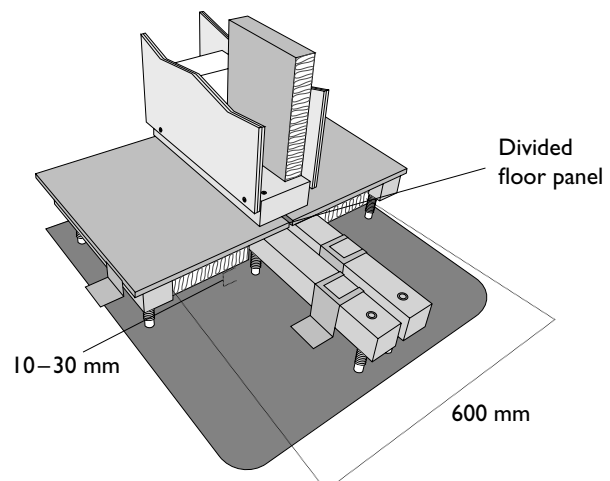
For intermediate walls it is best to use 70-joists with mineral wool inside and double sheets of plasterboard. Also use acoustically insulated doors intended for the purpose. R<sub>w</sub> 40 – 44 dB and L<sub>n, w</sub> 62 – 68 dB is achieved with the above structure.

## Gap (floor/wall)

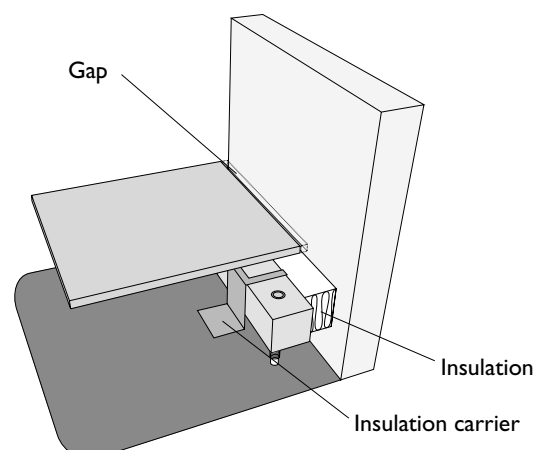
Install the floor decking so that a gap is formed against walls. The width of the gap should correspond to the floor paneling manufacturer's instructions, however at least 5 mm. Seal the gap acoustically. Place a strip of insulation between the framing joists and the wall on insulation carriers. The insulation carriers should be away from the wall. Alternatively, the gap can be sealed with a retainer strip, yarn, soft mastic etc.



*It is advantageous to secure light walls elastically under arches.*



*Divide the decking for better acoustic insulation between apartments or offices. Double joisting is not needed beneath walls if the joists are installed at 90 degrees to the walls.*



*The space between framing joist and wall is sealed with insulation or weather strip.*



# Sound classes

## Improves insulation against impact sounds and airborne sounds

Measurements at the engineering acoustics department at Lund Institute of Technology show that Nivell System improves the impact sound level by 25-28 dB in a 185 HDF floor structure. Measurements at the Swedish National Testing and Research Institute (SP) produced a balanced improvement in the impact sound level corresponding to  $\Delta L_w$  21-28 dB depending on construction.

Nivell System with parquet flooring gives sound insulation class B in many of the construction systems that are currently in use. In more lightweight structures Nivell might need to be supplemented with plaster and/or mineral wool. In older precast buildings with thin concrete floor structures weighted with sand and thin, concrete partition walls, sand and floating floors may need to be replaced with Nivell System acoustic flooring. In some houses flanking transmission in the partition walls limits performance to sound insulation class C. Older floor structures can also achieve sound class B, but additional measures such as plasterboard flooring may be needed to compensate for limited weight in the existing wooden subfloor.

**Contact Nivell System on phone no. +46 500-46 98 76 for suggestions for designs that meet your sound requirements.**

**Sound insulation in Swedish homes is stated as class A, B, C or D. C is the min. requirement in new builds (SS 25267(3)).**

**The values in brackets are the applicable sound requirements in Norway (NS 8175:1997).**

Class	Airborne-sound insulation dB	Impact sound level dB
A	61 (63)	48 (43)
B	57 (58)	52 (48)
C	53 (55)	56 (53)
D	49 (50)	60 (58)

*The requirements now also apply to kitchens and wetrooms.*

# Load groups

The Nivell System load table (imposed load as per BKR 3:4) is based on:

- The use of type approved floor decking.
- The floor decking satisfying the point load requirements for the chosen load group.
- Each floor decking panel lying across at least 2 "compartments", joist spacing max. 600 mm.
- Double framing joists (cc 300 mm) being installed at furnishable walls where high point loads such as bookcases etc. can be expected.
- Joist spacing for load group 3 not exceeding c/c 300 mm.

- Load group 1:** Residential loading (dwellings, hotels, etc.)
- Load group 2:** Assembly loading (schools, day centres, offices, etc.)
- Load group 3:** Crowd loading (museums, sports halls, etc.)

Screw			Joist	Type approved for load group		
Art no	Length	Property	Wooden joists	1	2	3
506	66 mm	Noise reducing	45 x 34 45 x 45 (and larger.)	• •	•	•
503	116 mm	Noise reducing	45 x 34 45 x 45 (and larger.)	• •	•	•
517	166 mm	Noise reducing	45 x 45 45 x 70 (and larger.)	• •	•* ••	
535	316 mm	Noise reducing	45 x 70	•	•	•

*\* To comply with load group 2, screw 517 needs a flat surface if it is to be installed in a 45 x 45 mm joist.*

## Slack (deformation) in conjunction with point loading

Nivell System is an interactive structure. In conjunction with the chipboard that has been screwed into place, joists and screws distribute the load and thereby also the deformation over a large area. With a point loading on the floor of 1 kN (approx. 98 kg)

the chipboard can buckle by up to about 2 mm. Joists and screws are also deformed. The total deformation, in relation to the subfloor, can then be estimated at an order of magnitude of 3 mm.

# Tests and development

RAPPORT från Mätprogram LTH 30/5 - 1/6 2005-06-07

Reglar 45X45  
 Skruvar 100 mm 90o Shore utvecklade  
 22 spån limmad och limmad och skruvad på reglar där så anges  
 14 mm lamellparkett på 2 mm Aiolene  
 2,5 linoleum Forshaga på lumpapp  
 2,5 linoleum Forshaga Marmoleum med sviktbaksida där det är angivet

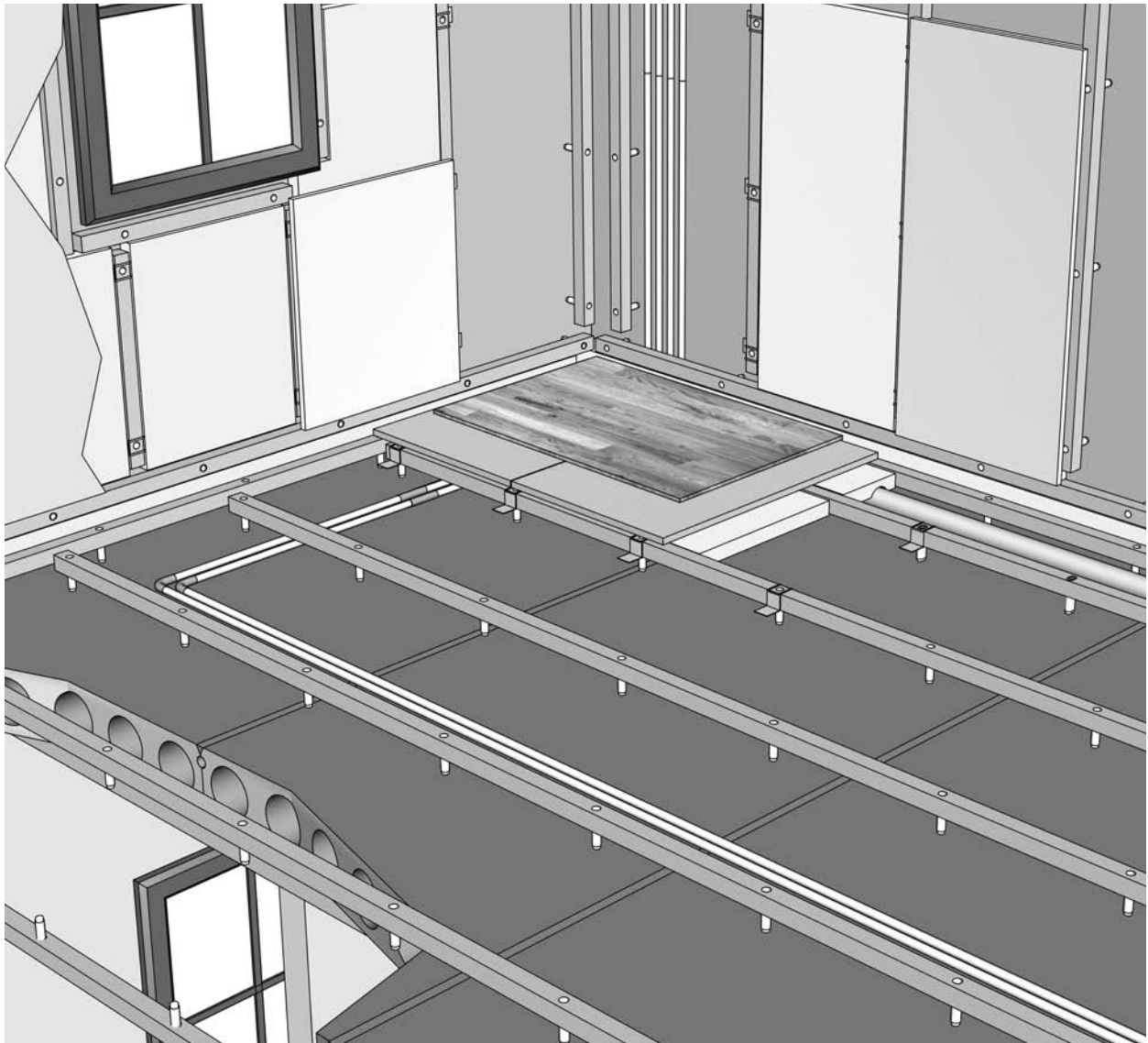
Mät nr	Höjd c/c	Fyllning	Golvbel	Fastsättning	Anm	Rw	C	Lnw	C
1	100 600		parkett	limmad		59	-2	52	1
2	100 600		linoleum	limmad	Marmoleum	58	-2	54	1
5	100 600		parkett	limmad + skruvad		--	--	54	1
6	100 300		parkett	limmad		58	-2	52	1
6B	100 300		gips+ parkett	limmad		59	-2	48	1
		Räbjäklag							
7B	100 600	45 MU	linoleum	limmad		55	-1	84	-13
7C	100 600	45 MU	linoleum	limmad		58	-1	52	2
8	100 600	45 MU	parkett	limmad				52	2
8B	100 600	45 MU	parkett	limmad		59	-2	49	1
8C	100 600	45 MU	parkett	limmad	rengjorda reglar	59	-1	51	1
9	100 600	45 MU	gips + parkett	limmad		59	-1	51	0
9B	100 600	45 MU	gips + parkett	limmad		59	-1	46	1
9C	100 600	45 MU	gips + parkett	limmad		59	-1	48	1
11	50 600		linoleum	limmad		59	-1	46	1
12	50 600		parkett	limmad		57	-2	55	0
15	50 600	45 MU	linoleum	limmad		58	-2	54	1
16	50 600	45 MU	parkett	limmad		58	-2	53	2
17	50 300		parkett	limmad		58	-1	53	1
18	75 600		parkett	limmad		x	x	x	x
19	75 600		linoleum lumpapp	limmad	kantisol	59	-2	54	1
					kantisol	58	-2	54	1

## Tests of the floor structure

We regularly have tests of the floor structure carried out at bodies including the engineering acoustics department at Lund Institute of Technology. The tests are based on studying the acoustic process in detail and refining both methods and materials. Parts of Nivell System's production process are also tested.

# A versatile joist system for floors

Further developed for walls and ceilings



*The picture shows Nivell System's versatility; acoustic flooring in combination with voids under joists for installation of services. Ventilation can be installed simply and in a proven manner in order to dry out construction moisture.*

## **Combination acoustics – ventilation**

The combination of acoustic flooring and floor ventilation is an effective solution in new buildings with a high moisture content in the subfloor – this also applies to buildings with prefabricated HDF-subfloors.

The drying process does not need to be speeded up. The floor's ventilation can be "temporarily" connected to an existing exit air unit or to a separate fan, thus bringing drying of subfloors under control. This eliminates the risks associated with construction moisture and the attendant future worries. In addition, the void under the floor provides an excellent space for installations (water and electricity services, etc.).

## **Nivell System fully utilized:**

- Improvement in impact sound level of between 21 – 28 dB (depending on surrounding conditions)
- Guarantees the drying process in the floor structure
- Good indoor environment
- Increased customer benefit

# Installation floors and floor ventilation

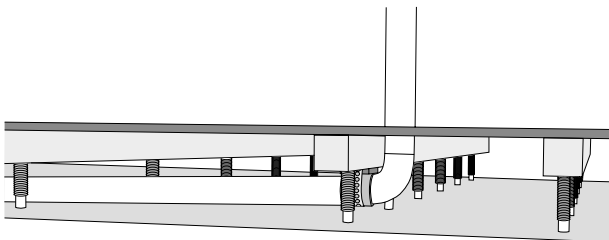


*The services have been installed, ready to install the Nivell floor.*

## Installations in the floor

As Nivell System acoustic flooring is installed on plastic screws with elastic bushings, when the floor is subject to loads, they move up and down, even though minimally.

All installations must therefore be secured to the sub-floor so that they are not squeezed against screws or joists. If this happens, noise, friction or sound transmission can occur. Installations are secured in both the subfloor and the decking in such a way as to permit the slack that an acoustic floor has. For example, a pipe should be fixed in the subfloor and in the bottom of joists that are slightly apart from each other laterally, before being fed through the decking.



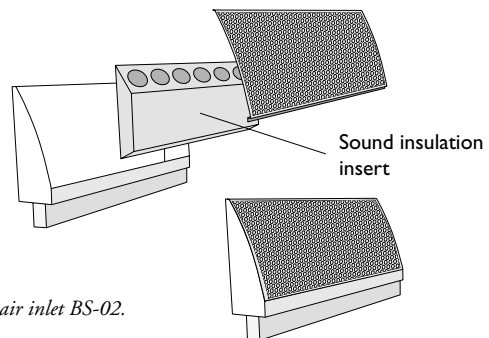
*Rigid installations are suspended from the decking, with a clearance of at least 2 mm from the subfloor, enabling them to spring.*

## Floor ventilation

Using Nivell System floor ventilation saves unnecessary time waiting for all construction moisture to be eliminated. Drying out construction moisture before installing decking can take years.

All the floor inlets in the system for supply air have a sound insulation insert as an optional extra. The sound insulation insert in the floor inlet enables holes to be made in the floor without any deterioration in sound insulation. Floor inlet BS-02 is intended for the home environment. The inlet is so slim that it permits furniture against walls. Supply air inlet BS-05 and BS-10, which are larger and more robust, are intended for schools, daycare centres etc. (See the "Ventilation" brochure.).

**Nivell System meets the market's requirements by some margin for healthy indoor environments – with guaranteed durability. The choice is therefore simple. Choose Nivell System.**

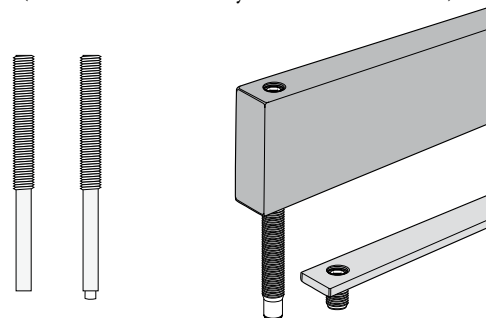


*Supply air inlet BS-02.*

## Construction heights

Nivell System has an extra long screw (art no 530/535). It is a product that permits construction heights up to 402 mm to the top of the joist. The screw makes large installations possible, as the clearance is up to 399 mm from the subfloor to bottom of joist. The screw already has applications in environmental refurbishments and conversions. On many occasions the settling that occurs in older buildings is so great that the long screw has been required.

Nivell System's minimum construction height is 15 mm to top of the joist (35 mm in acoustically insulated structures).



# Self-inspection plan

## For installation of Nivell System ACOUSTIC FLOORING

# 6:2.5

Point		Yes	No	Rectified
<b>PRECONDITIONS:</b>				
LJ-1	Working drawing inspected: Drawing no.: ..... Date: ..... Rev.: .....			
LJ-2	What type of subfloor: .....			
LJ-3	What sound insulation requirements have to be met? A, B, C, ... : .....			
LJ-4	Has the subfloor been acoustically tested? If yes, append results:.....number of pages	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>BEFORE INSTALLING JOISTS, CHECK:</b>				
LJ-5	Are there lead-throughs for: <input type="checkbox"/> Water pipes <b>Are they sealed?</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> Sanitation "	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> Heating pipes "	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> Ducting for electricity cables "	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> Ducting for ventilation "	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> Other..... "	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LJ-6	Are there any cracks in the subfloor? <small>Small hair thin cracks are significant. Carry out acoustic testing if in doubt.</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LJ-7	Are there gaps under walls with acoustic insulation requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LJ-8	Are radiators located above each other on the same vertical stem?	<input type="checkbox"/>	<input type="checkbox"/>	
LJ-9	What is the applicable joist spacing:.....mm	<input type="checkbox"/>	<input type="checkbox"/>	
<b>AFTER INSTALLING JOISTS, CHECK:</b>				
LJ-10	That every joist can be gently bent laterally (approx. 15°) in each direction and that no sounds arise.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	That all screws are intact and firmly secured in the subfloor with no play.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	That all joists are placed apart from each other and from walls.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	That the subfloor is properly cleared of construction waste such as sawdust etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	That screw support art. no. 570 is cut 5 mm beneath the top of joists when used in conjunction with acoustic screw art. No. 535.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>AFTER INSTALLING FLOOR DECKING, CHECK:</b>				
LJ-11	That there is a narrow gap between floor decking and walls and that it is acoustically sealed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LJ-12	That the lead-throughs in the decking have been sealed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LJ-X	Additional, relevant self-inspection plans: <input type="checkbox"/> Construction 6:2.1 <input type="checkbox"/> Ventilation 6:2.2/6:2.4 <input type="checkbox"/> Other...page(s)			

Remarks:

Town \_\_\_\_\_ Date \_\_\_\_\_

Signature / Quality manager/Installation manager \_\_\_\_\_

Name (please print): \_\_\_\_\_

Project:

Reference no.:

# Brochures

Also available for downloading at [www.nivellsystem.se](http://www.nivellsystem.se).



## Nivell brochure

This brochure deals with the system as a whole.

## Construction

Gives construction examples and advice and tips on how to install the floor joist system. Handy to have around at the worksite.

## Ventilation

Goes into Nivell floor ventilation in some detail. Where a floor that includes ventilation is to be built both the “Construction” and the “Ventilation” brochures are required. Before starting joist installation, it is important to follow the instructions in “Ventilation”.

## Acoustics

Goes into Nivell System acoustic flooring in some detail. Where acoustic flooring is to be installed, both the “Acoustics” and the “Construction” brochures are required.

The “Ventilation” brochure should also be added if ventilation is part of the design. Before starting joist installation, it is important to follow the instructions in “Acoustics” (and also in “Ventilation” where relevant).

**Support, tel +46 500-46 98 76**

All construction projects are different. Our technical support service can help when you have questions or queries.

# Articles

## Tools

ART NO	PRODUCT	DIMENSIONS
<b>Standard tools</b>		
401	Drill bit and thread tap, complete	
410	Wood drill bit for art. no. 401	21 mm
700	Brace screwdriver, T-handle	
701	Brace screwdriver (short)	200 mm
703	Brace screwdriver (long)	1,000 mm
704	Screw bit drill shank	200 mm
707	Screw bit drill shank	600 mm
702	Screw bit (for power tools)	250 mm
706	Screw bit (for power tools)	600 mm
708	Screw bit (for power tools)	1,000 mm
710	Brace screwdriver, T-handle	1,000 mm
715	Adjustment tool for laser	
990	"Hällger" joist grip	
991	Handle for joist grip	
995	"Hällger" joist grip long	1,900 mm
<b>Tools for anchor fitting</b>		
601 A	Driftpin A (hollow red) for concrete anchors	250 mm
601 B	Driftpin B for concrete anchors (blue, expanding)	250 mm
602 A	Driftpin A (hollow red) for concrete anchors	500 mm
602 B	Driftpin B for concrete anchors (blue expanding)	500 mm
603 A	Driftpin A (hollow red) for concrete anchors	950 mm
603 B	Driftpin B for concrete anchors (blue expanding)	950 mm
950 H	Concrete drill bit	6 x 300 mm
951 H	Concrete drill bit	6 x 210 mm
952	Concrete drill bit	6 x 400 mm, long
963	Concrete drill bit	6 x 160 mm
<b>Tools for use with screws</b>		
935	Magnetic socket	8 mm
936	Socket holder	200 mm
937	Socket holder	400 mm
964	Concrete drill bit	5 x 160 mm
970 D	Concrete drill bit	5 x 400 mm
971	Concrete drill bit	5 x 300 mm
972	Concrete drill bit	5 x 210 mm
<b>Miscellaneous</b>		
0545	"Comfort strip"	5 x 45 x 2,000 mm
110	Nogging channel for joists	
120	Nogging channel for walls	

## Ventilation

ART NO	PRODUCT	DIMENSIONS
<b>Supply air</b>		
049102	Metal floor inlet	BS -02 including filter
049105	Metal floor inlet	BS -05 including filter
049110	Metal floor inlet	BS -10 including filter
049120	AD strip, inclusive plastic anchors	L = 2,000 mm
<b>Exit air (pipe components are also available in 40 mm dim.)</b>		
220150	Plastic pipe	52 mm (2 metres)
220155	Elbow	45° / 52
220165	Elbow	90° / 52
220175	T-piece	52-52
220185	Muff	52
220190	End cap	52
031061	Damper	52
026062	Transition piece	63-52
220215	Bonding agent	50 ml
114415	Pipe kit (14 m of pipe complete with elbows and fittings/fasteners)	
<b>Fans/miscellaneous</b>		
114456	Nivell System 50, complete with pipes, AD strip, BS box etc.	
114477	Nivell System 70, complete with 5-step transformer	
114499	Nivell System 100, complete with damper and 5-step transformer	
114466	Nivell System 300/150, complete with damper and 5-step transformer	
114410	Exit air kit with cowl	
114420	Exit air kit wall acoustic	
114433	Alarm kit	

## Floor structure

ART NO	PRODUCT	DIMENSIONS	
<b>Joists</b>			
200	Wooden joist	45 x 34 x 3,600 mm	
201	Wooden joist	45 x 45 x 3,600 mm	
202	Wooden joist	45 x 70 x 3,600 mm	
203	Wooden joist	45 x 95 x 3,600 mm	
204	Wooden joist	45 x 120 x 3,600 mm	
225	TM plank	45 x 220 x 3,600 mm	
300	Plastic joist*	45 x 10 x 3,250 mm	
<b>Screws</b>			
505	Low profile screw	50 mm	
506	Acoustic screw	66 mm	
525	Red, industrial screw	100 mm	
501	Original plastic screw	100 mm	
503	Acoustic screw	116 mm	
515	Plastic screw	150 mm	
517	Acoustic screw	166 mm	
530	Long plastic screw	300 mm	
535	Long acoustic screw	316 mm	
570	Screw support	400 mm	
<i>Art 501, 503, 505, 506, 515 &amp; 517 are available with a support plate, for permanent installation with bonding mastic (no drilling).</i>			
<b>Anchors</b>			
901	Concrete anchor		
910	Concrete anchor for acoustic screws		
926	Concrete anchor, industrial		
<b>Screws</b>			
913	Concrete screw		
914	Concrete screw, acoustic screw		
915	Aerated concrete screw		
942	Wood screw/aerated concrete screw		
943	Wood screw/aerated concrete acoustic screw		
<b>Insulation carrier</b>			
805	Insulation carrier	20 mm	
810	Insulation carrier	34 mm	
811	Insulation carrier	45 mm	
801	Insulation carrier	55 mm	
812	Insulation carrier	70 mm	
813	Insulation carrier	95 mm	
814	Insulation carrier	120 mm	
<b>Insulation slabs</b>			
Isover	Paroc	Roxull	
GI 2035			20 x 555 x 1,200 mm
GI 3533	*	*	35 x 555 x 1,200 mm
GI 4533	*	*	45 x 555 x 1,200 mm
GI 7033	*	*	70 x 555 x 1,200 mm
GI 9533	*		
<i>* Roxull and Paroc Roxull and Paroc are ordered and invoiced directly via the respective supplier. The terms of your agreement with the supplier apply.</i>			

## Sealing and bonding mastics

ART NO	PRODUCT	DIMENSIONS
1425	Sealing/Bonding mastic	300 ml grey
1430	Sealing mastic gun	
049124	Sealing strip	3 m roll

\* Plastic joists are not covered by Nivell System's type approval

## Other articles

In addition to the above, Nivell System stocks a wide range of ventilation products such as units, SPIRO pipes, fittings, silencers, parts and spare parts. Contact us for current lists and prices.

# The complete joist system



For your closest regional office and/or distributor, visit our website:

[www.nivellsystem.com](http://www.nivellsystem.com)



(Head office)

Prästängen Sverige AB • Kylarvägen 7, 541 34 Skövde  
Tel +46 (0)500 – 46 98 60 • Fax +46 (0)500 – 48 97 95  
[prastangen@prastangen.se](mailto:prastangen@prastangen.se)



Contact the head office  
Prästängen Sverige AB  
Tel +46 (0)500 – 46 98 60  
Fax +46 (0)500 – 48 97 95  
[www.nivellsystem.com](http://www.nivellsystem.com)



Moland byggevarer A/S  
Strandvejen 16, dk 7800 Skive  
Tel +45 – 96 14 50 00  
Fax +45 – 96 14 50 99  
[www.nivellsystem.com](http://www.nivellsystem.com)



Contact the head office  
Prästängen Sverige AB  
Tel +46 (0)500 – 46 98 60  
Fax +46 (0)500 – 48 97 95  
[www.nivellsystem.com](http://www.nivellsystem.com)

**Manufacturer's declaration of conformity:** In compliance with 16 § in BFS 2000:27 (the ordinances of the National Board of Housing, Building and Planning) Type 2, this declaration shall always be given to the work management organisation when goods are delivered to the construction site.

Bygginnovationer i Mariestad AB confirms that the manufacture of NIVELL SYSTEM conforms with **type approval certificate no. 1255/97 and 0469/01** and the documents appertaining and referring thereto.