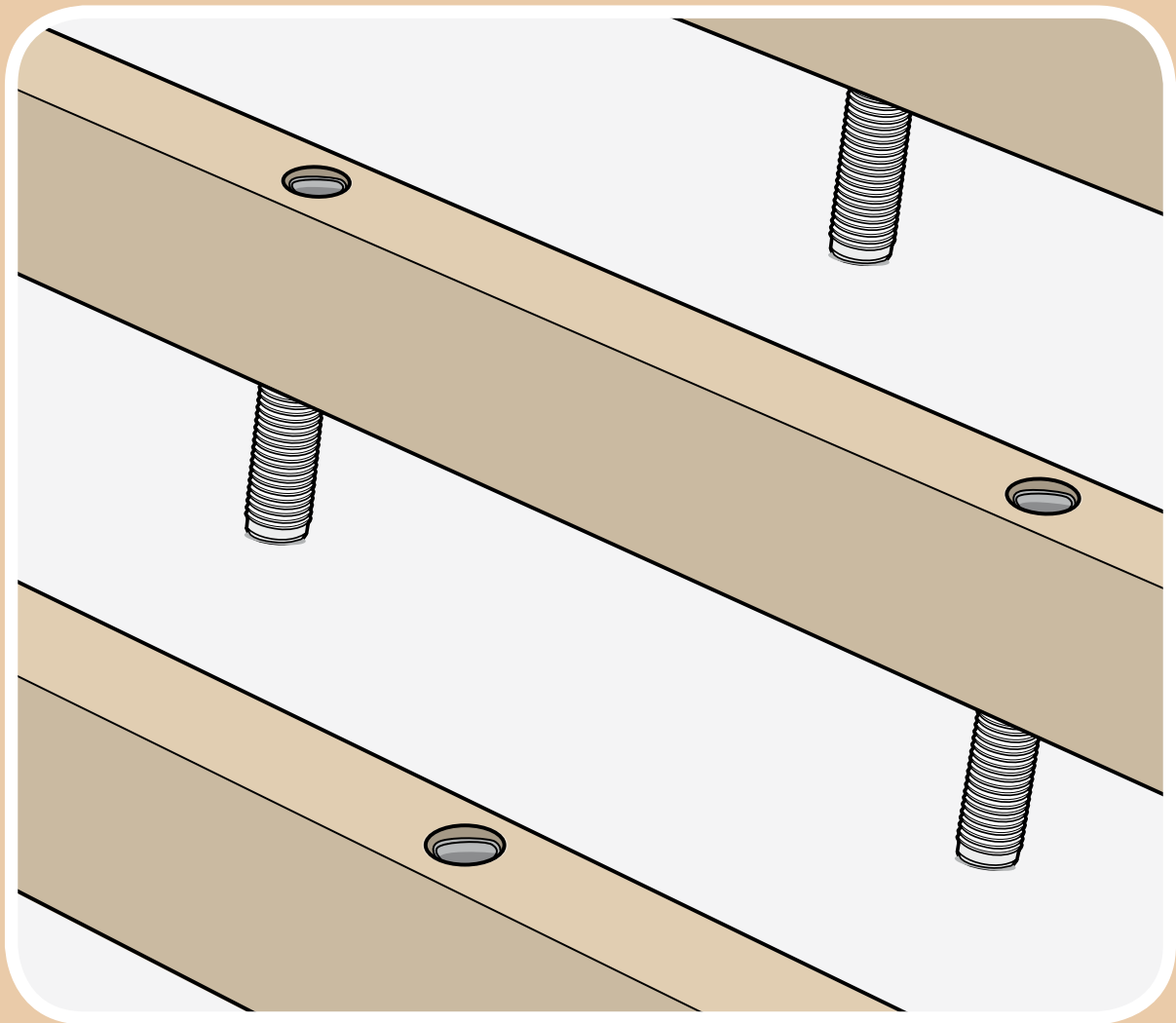


Simple • Safe • Flexible

Binder II BSAB 83 H5 BSAB 96 HSD



There's only one joist that counts



Construction

Joisting for floors, walls and ceilings



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

Nivell System

The complete floor joist system for ...

- Sick buildings
- Uneven surfaces
- Strict sound insulation requirements
- Floors for installations
- Floors with damping properties



Nivell System can be used in ...

- Homes
- Schools and daycare centres
- Offices
- Industrial facilities
- Public buildings
- Activity halls etc.



Contents

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6	Floor types
7	Dimensions of materials
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14	Tips
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Construction

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 I255/97 and 0469/01

*i.e. = tested in accordance with the rules of the National Board of Housing, Building and Planning. (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 I255/97, 0469/01

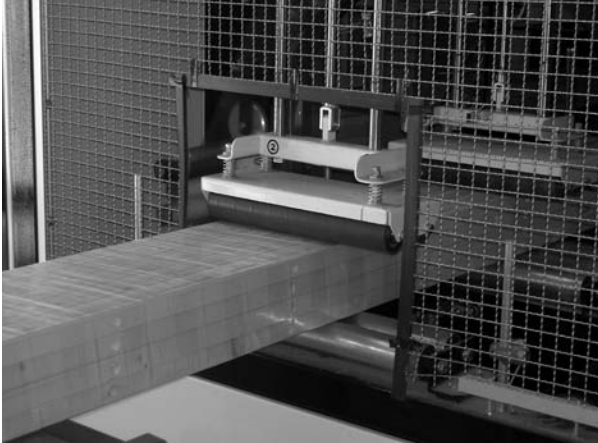
BBR = the building regulations of the National Board of Housing, Building and Planning.
BKR = the design regulations of the National Board of Housing, Building and Planning.

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.

Joist quality and storage advice



Wooden joists

Nivell System wooden joists are manufactured to be, at a minimum, quality level T0 (K12) and meet additional straightness requirements (SS 232716). The timber is dried to moisture content class 12 (Swedish standard 232740). Joists are planed, carefully sawn (with round corners) and quality stamped. They are also fully identifiable. All Nivell System wooden joists are 3,600 mm long, pre-drilled and threaded. They are supplied factory wrapped in plastic.

Plastic joists

Nivell System plastic joists are made from recycled polypropylene. They are 3,250 mm long. *Plastic joists are not covered by Nivell System's type approval.*

Storage of wooden joists at the worksite

To maintain high quality when installing floors, it is important that joists are correctly stored at the worksite. We recommend that Träteks' (Sweden's national institute for wood technology research) guidelines for the storing of Nivell System joists are followed:

"To minimise dimensional changes in the finished floor, Nivell floor joists are dried to moisture content class 12. It is thus important to observe the following storage advice.

The timber shall be stored away from precipitation. For protection from rising moisture, and also to facilitate handling, it shall be stored at least 15 cm clear of the ground. Where the packing is not intact and the timber is to be stored for a long time (several weeks), it shall be kept in an enclosed space that has a minimal air change rate. The enclosed space may be a container, a well sealed tarpaulin or similar.

In general, storage times shall be kept to a minimum and packaging shall not be opened until the timber is to be used."

Floor types

Examples of standard floors

Construction heights from 44 mm to 386 mm to top of joist.



Construction height 44-100 mm
with joist art no 200 and screw 501.



Construction height 55-111 mm
with joist art no 201 and screw 501.



Construction height up to 386 mm
with joist art no 204 and screw 530.
c/c 600 with screw support 570.
Otherwise c/c 300.

Examples of acoustic flooring

Construction height from 35 mm to 402 mm to top of joist.



Construction height from 35 mm
with joist art no 300 and screw 503.



Construction height 55-127 mm
with joist art no 201 and screw 503.



Construction height up to 402 mm
with joist art no 204 and screw 535.
c/c 600 with screw support 570.
Otherwise c/c 300.

Examples of sports, games and activity floors

Construction height from 35 mm to 402 mm to top of joist.



Construction height from 35 mm with
joist art no 300 and screw 503, c/c 300.



Construction height up to 402 mm with
joist art no 204 and screw 535, c/c 300.



LP/Low profile floors

Construction height from 15 mm.

The floor panel is installed using
Nivell Sealer/Bonder art no 1421
between the decking and the joists.

”Installation” floors

Clearance for installations 399 mm.



Using joist art no 202 and screw 535
a clearance of up to 399 mm. can be achieved.
c/c 600 with screw support 570. Otherwise c/c 300.

Industrial floors, high load

Can be constructed for extremely high loads, construction height 80–165 mm to top of joist.



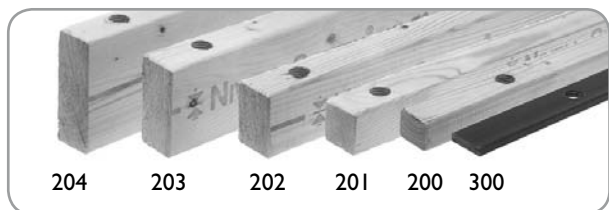
Construction height from 80 mm with
joist art no 202 and screw 525, c/c 300.



Construction height up to 165 mm
with joist art no 204 and screw 525, c/c 300.
Contact Nivell for further details.

Dimensions of materials

Joists



225

The TM plank makes it easy to apply lift under intermediate walls and ensure a good seal.



Art no	Dimensions	Hole spacing	Holes/joists	Material
200	45 x 34 x 3600	c/c approx. 350 mm	11	Wood
201	45 x 45 x 3600	c/c approx. 500 mm	8	Wood
202	45 x 70 x 3600	c/c approx. 500 mm	8	Wood
203	45 x 95 x 3600	c/c approx. 500 mm	8	Wood
204	45 x 120 x 3600	c/c approx. 500 mm	8	Wood
300	45 x 10 x 3250	c/c approx. 315 mm	11	Plastic*
225	45 x 220 x 3600	c/c approx. 500 mm	16	Wood

*Not type approved

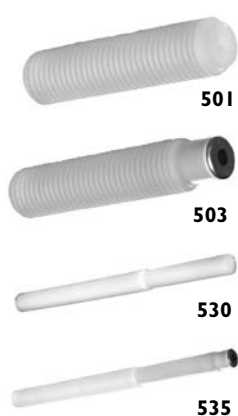
The wooden joists are quality class T0 and moisture content and stress controlled (balanced) to moisture content class 12. Because polypropylene (PP) plastic is not a traceable material, plastic joists are not type approved. Load-bearing capacities and function are the same as those of wooden joists.

Screws

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

The Nivell System load table (imposed load as per BKR 3:4) is based on: the use of type approved floor decking that satisfies the

point load requirements of the chosen load group; and, each floor decking panel lying across at least 2 "compartments". It should be borne in mind that loads increase around "furnishable" walls. We thus recommend always installing double joisting, c/c 300 mm, here (due to the decking).



NB! The lowest height between concrete and a Nivell wooden joist is 10 mm and for a plastic joist it is 5 mm. We have shown the most commonly occurring load groups, more information is to be found in BKR pages 39-40, or call our support service on +46 500-46 98 76.

Art no	Name	Length	Smallest joist size**	Load group		
				1	2	3
505	Low profile screw	50 mm	45 x 45 45 x 34 45 x 10*	•	•	•
506	Acoustic screw	66 mm	45 x 45 45 x 34 45 x 10*	•	•	•
501	Original plastic screw	100 mm	45 x 45 45 x 34	•	•	•
503	Acoustic screw***	116 mm	45 x 45 45 x 34 45 x 10*	•	•	•
515	Plastic screw	150 mm	45 x 45 45 x 34	•	•	•
517	Acoustic screw***	166 mm	45 x 45 45 x 34	•	•	•
530	Long plastic screw	300 mm	45 x 70****	•	•	•
535	Long acoustic screw***	316 mm	45 x 70****	•	•	•

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

joist spacing max cc 600 mm
 joist spacing max cc 600 mm
 joist spacing max cc 300 mm

* Plastic joists are not covered by Nivell System's type approval.
 ** Screw/joist combinations with joists of a larger size than in the table are, of course, within the load group.
 *** Requires that the design provides for the points where longer duration point loading may occur.
 Fit double joisting (c/c 300 mm) at "furnishable" walls. Acoustic screws also require a flattish surface directly under each screw to avoid oblique loading.
 **** c/c 600 with 570 screw support, otherwise c/c 300. Applies for load groups 1 and 2.

Construction heights to top of joists (lowest – highest)

Art no	Joist	200	201	202	203	204	300	225
(Hole spacing)		45x34x3600 (350 mm)	45x45x3600 (500 mm)	45x70x3600 (500 mm)	45x95x3600 (500 mm)	45x120x3600 (315 mm)	45x10x3250 (500 mm)	45x220x3600
Nivell screw								
505	50 mm	44-50	55-61	---	---	---	15*-50	55-61
501	100 mm	44-100	55-111	80-136	105-161	130-186	---	55-111
503	116 mm acoustic	55-116	55-127	80-152	105-177	130-202	35-116	55-127
515	150 mm	---	55-161	80-186	105-211	130-236	---	55-161
517	166 mm acoustic	---	55-177	80-202	105-227	130-252	---	55-177
530	300 mm	---	---	134-336	134-361	134-386	---	---
535	316 mm acoustic	---	---	150-352	150-377	150-402	---	---
525	100 mm red	---	---	80-115	105-140	130-165	---	---

*When using concrete screw 911, the lowest height is 15 mm. Using concrete anchor 901, the lowest height is 20 mm. When insulating floors with art. 300, 25 mm is the lowest height.

Components and tools



401



410



700, 710



701



702



703



706



708



715



990



991



601 A+B 250 mm
602 A+B 500 mm
603 A+B 950 mm



950 – 952

Standard tools

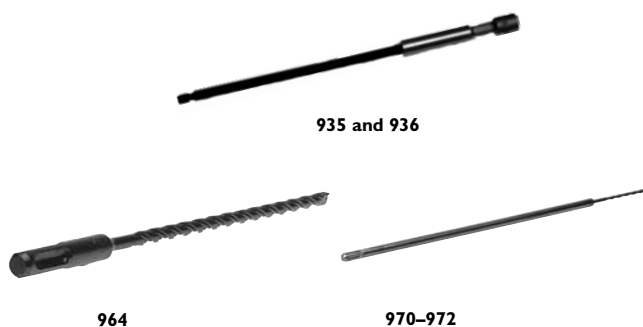
- 401 Drill bit and screw tap, for making extra, threaded holes
- 410 Spare drill bit for the above, 21 mm
- 700 Brace screwdriver, T-handle, 200 mm
- 701 Brace screwdriver (short), 200 mm
- 702 Screw bit (for power tools), 200 mm
- 703 Brace screwdriver (long), 1,000 mm
- 704 Screwbit drill shank, 200 mm
- 706 Screw bit (for power tools), 600 mm
- 707 Screwbit drill shank, 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 for c/c distances c/c 300, 400 and 600 mm
- 991 Handle for "Hällger" joist grip
- 995 "Hällger" long joist grip 1900 mm, c/c 300 and 600 mm

Tools for anchor fitting

- 601A Driftpin for pushing the concrete anchor into the hole. 250 mm.
- 601A Driftpin for expanding the concrete anchor 250 mm.
- 602A Driftpin for pushing the concrete anchor into the hole. 500 mm.
- 602A Driftpin for expanding the concrete anchor 500 mm.
- 603A Driftpin for pushing the concrete anchor into the hole. 950 mm.
- 603B Driftpin for expanding the concrete anchor. 950 mm.
- 950H Concrete drill bit, 6 x 300 mm
- 951H Concrete drill bit, 6 x 210 mm
- 952 Concrete drill bit, 6 x 400 mm
- 963 Concrete drill bit, 6 x 160 mm

Tools for use with screws

- 927** Bit for industrial concrete screw
- 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



110

Nogging channel for joists

120

Nogging channel for walls

Anchors/screws

- 901** Concrete anchor for screws: 501, 505, 515 and 530
- 910** Concrete anchor for acoustic screws: 503, 506, 517 and 535
- 913** Concrete anchor for screws: 501, 505, 515 and 530
- 914** Concrete anchor for acoustic screws: 503, 506, 517 and 535
- 915** Anchor for aerated concrete
- 926** Industrial concrete anchor for screws: 525
- 942** Wood/aerated concrete screw for screws: 501, 505, 515 and 530
- 943** Wood/aerated concrete screw for acoustic screws 503, 506, 517 and 535

Miscellaneous

- 1425** Sealing/bonding mastic for sills and plastic joists
- 1430** Sealing mastic gun

Hilti

Hilti fastenings – specially developed tools and fasteners for Nivell System. Available from Hilti distributors.



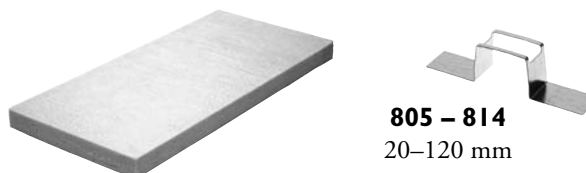
Insulate

Nivell System insulation – high shape stability, especially adapted for Nivell System.

Isover	Paroc	Roxull	Insulation thickness	Insulation carrier
GI 20 35			20 mm	805
GI 35 35	*	*	34 mm	810
GI 4535	*	*	45 mm	811
GI 7035	*	*	70 mm	812
GI 9535	*		95 mm	813

** Roxull and Paroc are ordered and invoiced directly via the respective supplier. The terms of your agreement with the supplier apply.*

The above art. nos. are for c/c distance 600 mm. Other widths can be offered on request.



Ventilate

See Nivell System's "Ventilation" brochure.

Material consumption – ready reckoner

STANDARD FLOORS:

Joists: $2.5 \text{ (lin. m)} \times \text{floor area (m}^2\text{)} = \text{[]} \div 3.6 \text{ (lin. m)} = \text{[]}$ joists
2.5 lin. m in normal cases, larger areas down to 2.2 lin. m. c/c 400=3.2 lin. m, c/c 300=3.6 lin. m.

Screws: Number of joists x 8 = [] screws

Concrete anchors: As many as there are screws = [] concrete anchors

Insulation carriers: As many as there are screws = [] carriers

34MM WOODEN JOISTS:

Joists: $2.5 \text{ lin. m} \times \text{floor area (m}^2\text{)} = \text{[] lin. m} / 3.6 = \text{[]}$ joists

Screws: Number of joists x 11 = [] screws

Concrete anchors: As many as there are screws = [] concrete anchors

Insulation carriers: Number of joists x 8 = [] insulation carriers

LOW PROFILE:

Joists: $2.5 \text{ lin. m} \times \text{floor area (m}^2\text{)} = \text{[] lin. m} / 3.25 = \text{[]}$ joists

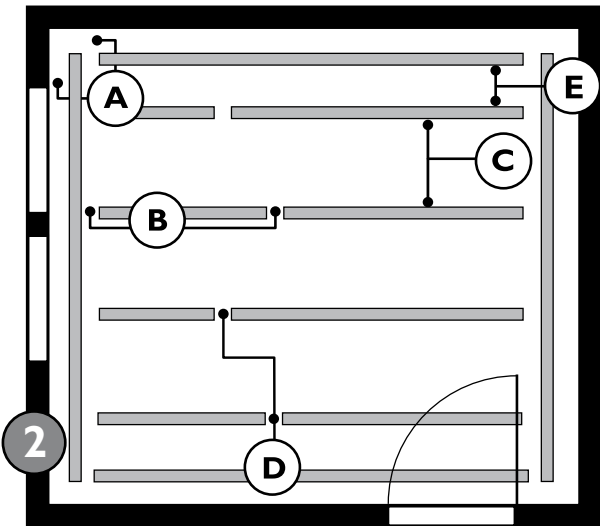
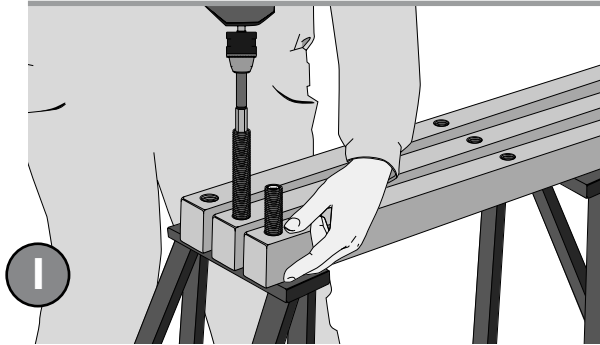
Screws: Number of joists x 11 = [] screws

Concrete anchors: As many as there are screws = [] concrete anchors

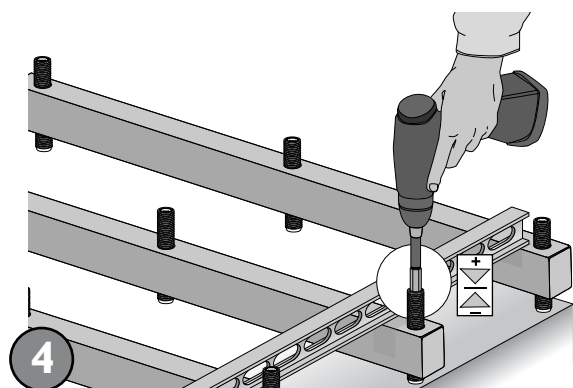
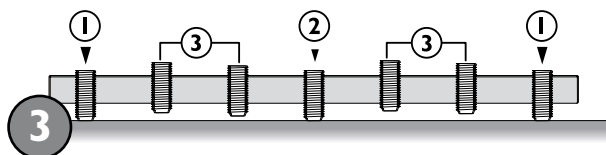
*Remember sealing/bonding mastic art no 1421 for low profile joists.
 One pack is sufficient for approx 25 m of joist.*

Installation advice for standard floors

If the floor is to be ventilated or have acoustic damping, refer to the "Ventilation" and "Acoustics" brochures respectively.



- A. "Framing joists" 60 mm from walls.
- B. Joist ends gap of 5–20 mm.
- C. Normal joist spacing c/c 600 mm.
- D. Joist "joins" are to be offset at least 10 cm. (Not with chipboard)
- E. Extra "framing joist" c/c 300 (due to decking).



Preparation

1. Check the levels of subfloor surfaces and the height of the finished floor. To ensure that, for example, doors operate freely, take the dimensions of the decking and the final floor covering into account. The subfloor must be clean and airtight.
2. Pre-install the Nivell screws in the joists. It is a good idea to do this standing up at a trestle or similar (see figure 1). Screw down the end screws to approximately the final height and the intermediate screws to a few cm less than this (see figure 3).

Joist installation See **Fastening** on page 12

3. Start by fitting the joists as a "framework" around the room. The end screws and one of the middle screws are to be fastened first and set to the right height (see figures 3–4). Screw down the remaining screws until they are firmly seated on the subfloor. Fasten them and fine adjust all the screws. (At least 34 mm of each Nivell screw must be left in the joist, does not apply to 10 mm plastic joist.) Thoroughly check that all the Nivell screws are securely fastened! Retighten the concrete anchors/screws as necessary. Joists must be installed with a 60 mm gap to walls (A) and a 5–20 mm gap between joist ends (B). The remaining joists are then installed. Avoid having joist "joins" in a straight line across the room (D).

Vacuum the concrete slab before installing insulation and floating floor.

Insulation installation

4. Set out the insulation carriers so that each insulation slab will be supported at three points on each side, and lay out the insulation slabs with the reinforced side at the bottom.

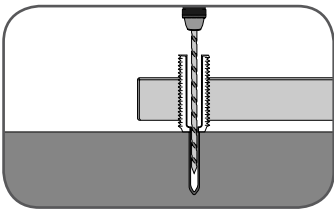
NB!

- At "furnishable" walls, an extra "framing joist" of c/c 300 is recommended (Due to decking and where installation is parallel with the wall.) (E)
- A useful aid when installing joists is the "Hällger" joist grip, art 990, which holds joists at the right c/c distance (C).
- Plastic joists should be adjusted as close to the Nivell screws as possible.
- Fix chipboard decking to plastic joists using sealing/bonding mastic art no 1425 (one pack covers approximately 15 m. of joists).
- When installing with plastic screws 530 and 535, use screw support, art 570 at c/c 600. Otherwise c/c 300.
- To eliminate movement in the floor when using art no 530/535 a support screw such as art no 501/503 should be installed horizontally in framing joists, approx. 2 per joist. Pull close to the wall without bracing (without fastening).

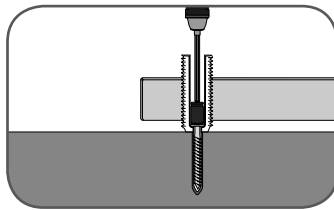
Fastening

There are four different ways of fastening Nivell screws to the subfloor.

A. Concrete screw (art 913, 914)

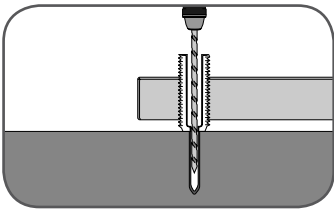


1. Drill a hole of at least 45 mm and remove the dust and debris. Use a 5 mm bit, art no 970-972.

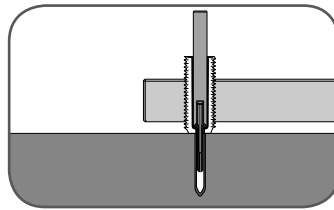


2. Screw in the concrete screw using magnetic socket 935 and socket holder 936 or 937.

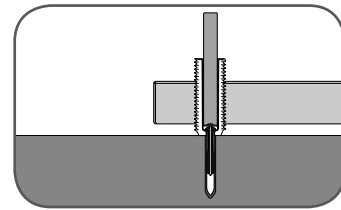
B. Concrete anchor (art 901, 910)



1. Drill a hole of at least 45 mm and remove the dust and debris. Use a 6 mm bit, art no 950-952.

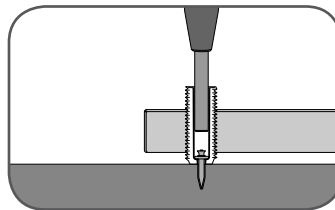
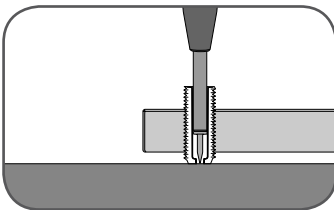


2. Drive down the anchor using the threaded driftpin 601 A/602 A/603 A.



3. Fasten the anchor using the blue driftpin 601 B/602 B/603 B.

C. Hilti gun nail



1-2. Use Hilti gun DX 41 with guide sleeve and Nivell System gun nails. Consult your Hilti distributor.

D. Wood screw (art 942, 943)

Wood screws 942 or 943 are used with magnetic socket 935 and socket holder 936 or 937 on wooden subfloors.

E. Plastic screw incl. support plate

When it is not possible to use screw (A,D), anchor (B) or gun nail (C), Nivell System's plastic screw can be used with a support plate (not type approved). It is secured with adapted glue (no drilling). Contact Nivell support for more info.

Bear in mind...

- If the part of the subfloor where a screw is to be used is very uneven, drive the screw home cleanly with a hammer.

- Nivell screws must be firmly attached to the subfloor.

- If any Nivell screws are incorrectly installed they should be removed. Make a new hole by the side of the old one. Also install a new screw..

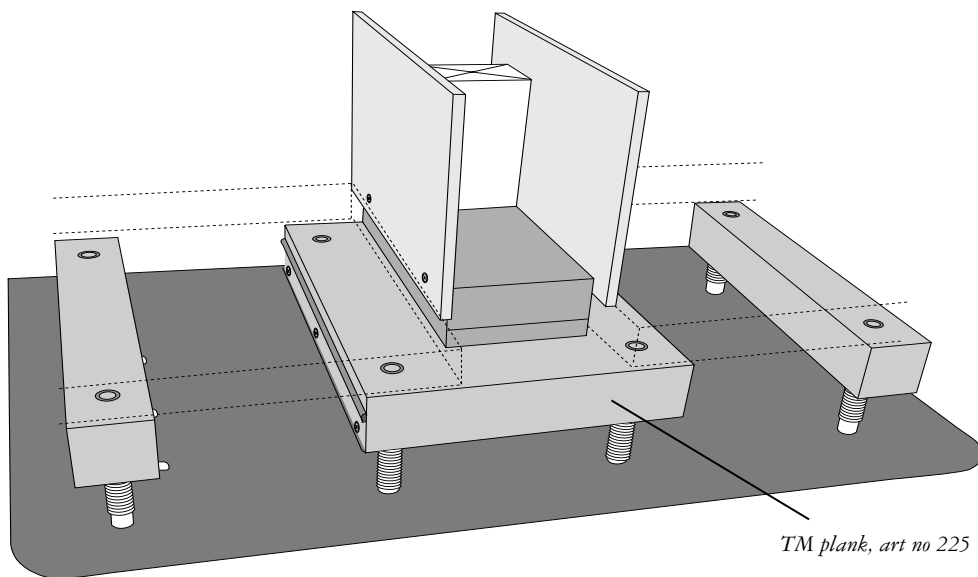
- The lowest height between concrete and a Nivell wooden joist is 10 mm, and for a plastic joist it is 5 mm.

SUPPORT

+46 (0)500 – 46 98 76

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 certificates 1255197 and 0469101** and the documents appertaining and referring thereto.



TM plank, art no 225

Intermediate walls

The TM plank makes it easy to apply lift under intermediate walls and ensure a good seal. If the floor is to be ventilated, or if there are sound insulation requirements, jointing and packing (sealing) must be carefully carried out to ensure full functionality.

For acoustic sectioning between rooms – see pages 7-8 of Nivell System's "Acoustics" brochure.

Finishing the joisting

Use a compass saw, or a sharp chisel, to cut off screw projections. (The projections must not be broken or knocked off.) Retighten the concrete anchors/screws as necessary. Check that the screws are firmly fastened in the subfloor.

Decking

For the best final results, 22 mm chipboard floor decking should be used. Follow the installation instructions provided by the decking supplier. A free choice of coverings may be used on the decking. Follow the supplier's instructions.

In line with professional requirements, parquet and wood floors shall be protected by a vapour barrier. Install the vapour barrier as per the supplier's instructions.

Nivell System's type approved floor ventilation is always recommended where floors are affected by damp and/or emissions.

Underfloor heating

Where underfloor heating is to be fitted, installation shall be as per the heating supplier's instructions for joisted floors.

**Improve work posture
using Nivell System's long tools!**

602/603 A & B



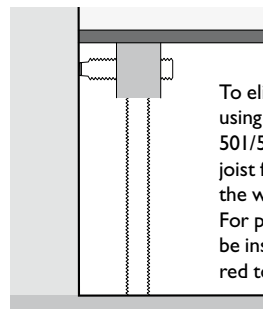
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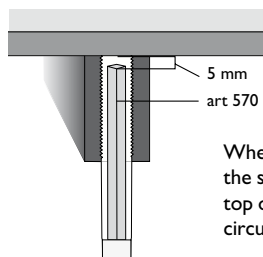


High floor constructions



To eliminate movement in the floor when using art no 530/535, a support screw art no 501/503 should be installed horizontally in joist frames (approx. 2 per joist). Pull close to the wall without bracing (without fastening) For plasterboard walls support screws should be installed where the plasterboard is secured to the wall joist.

- When installing with plastic screws 530 and 535, use screw support, art 570 at c/c 600. Otherwise c/c 300.



When using 535 acoustic screws, always cut off the screw support art no 570 5 mm under the top of the joist in order to prevent a "short-circuit"

Tip!

Before starting work, read through the installation instructions in this brochure and, where relevant, those in the “Acoustics” and “Ventilation” brochures!

1

When deciding on installation direction, consider the type of decking and how it is to be installed.

2

The instructions provided by floor suppliers generally stipulate that most deckings require edge joists or nogging pieces at short ends, etc. For Nivell System, a framework of joists is installed around the room.

3

At “furnishable” walls, an extra “framing joist” is recommended of c/c 300. (Applies where installation is parallel with the wall).

4

Install the joists so that the “joins” do not fall in a straight line across the room.

5

Where a framework is to be installed and the length is around 3,500 mm, the Nivell joists must be cut.

Cutting at either end will cut away one of the holes. Here, it is best to cut out the necessary length between two holes in the middle of the joists and then “draw the joist ends together” (leave a gap of 5 – 20 mm). This does away with the need to drill and thread a new hole in the joist.

6

If the length to be “framed” is no more than 200 mm longer than the joist’s 3,600 mm, centre the joist in the framework. Between joist ends, the floor decking panels are then supported by the “framing joists”. (applies where the decking is 22 mm flooring panels or similar).

7

If the floor is to be ventilated or acoustically damped, thoroughly seal the surrounding structures when the subfloor and walls are exposed (i.e. before joist installation has started). Read the “Ventilation” and/or “Acoustics” brochures (available to download at www.nivellsystem.com.)

Don’t hesitate to consult with Nivell System staff!

8

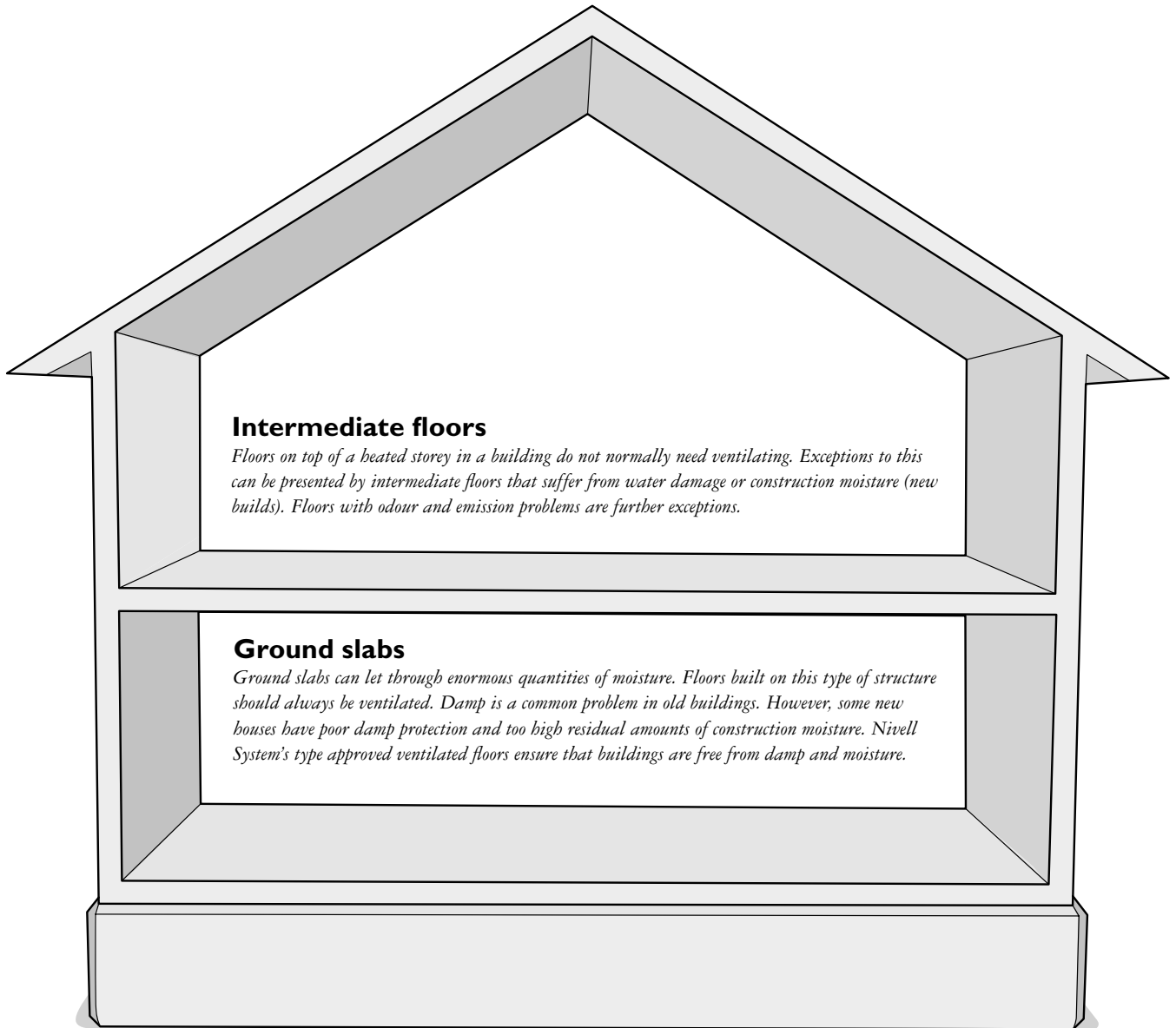
Where screws 530 or 535 are used for construction heights of 200 mm and above, it is recommended that, at external limit walls, horizontal support screws (e.g. arts. 501 and 503) are installed (c/c 1,500 mm and in the direction of the enclosing walls) in the framing joist. This is to minimise any horizontal movement in the construction.

Where Nivell System products have been prescribed, our support service can be contacted on tel +46 500 – 46 98 76.

When is floor ventilation necessary?

Ventilation

Floors that are affected by or that risk being exposed to damp, moisture migration, old residual odours or emissions should always be ventilated. For further information about ventilation, see the "Ventilation" brochure.



Acoustic and ventilated floors

In new builds and conversions Nivell's acoustic flooring can be combined with floor ventilation to deliver a reliable structure that saves time. The strictest sound insulation requirements can be satisfied and the floor ventilation eliminates construction moisture. You save time and money, at the same time as improving the environment.

Noise reduction

Depending on surrounding factors, Nivell System satisfies class A, B and C sound insulation requirements. Noise reduction can deliver considerable improvements in the environment when rebuilding old constructions, converting attics etc. In new builds, the strictest requirements can be satisfied. See the "Acoustics" brochure.

Brochures

Also available for downloading at 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.

Outline

Self-inspection plan

For Nivell System JOIST INSTALLATION

04-04

6:2.1

Point	Not done	Approved	Name/Position
BY-1 Grouted-in wooden blocks	<input type="checkbox"/>	<input type="checkbox"/>	
BY-2 Clean subfloor	<input type="checkbox"/>	<input type="checkbox"/>	
BY-3 Fungicide treatment	<input type="checkbox"/>	<input type="checkbox"/>	
BY-4 Sill sealing	<input type="checkbox"/>	<input type="checkbox"/>	
BY-5* "Communicating" holes in intermediate walls	<input type="checkbox"/>	<input type="checkbox"/>	
BY-6* Fire sealing	<input type="checkbox"/>	<input type="checkbox"/>	
BY-7 Joist installation	<input type="checkbox"/>	<input type="checkbox"/>	
BY-8 Seating of the Nivell screws	<input type="checkbox"/>	<input type="checkbox"/>	
BY-9* Sealing of channels and lead-throughs for pipes	<input type="checkbox"/>	<input type="checkbox"/>	
BY-10 Sealing of cracks	<input type="checkbox"/>	<input type="checkbox"/>	
BY-11 Inspection of insulation slabs and carriers	<input type="checkbox"/>	<input type="checkbox"/>	
BY-12* Inspection of ventilation installation	<input type="checkbox"/>	<input type="checkbox"/>	
BY-13 No obstructions to the ventilation flow	<input type="checkbox"/>	<input type="checkbox"/>	
BY-14* AD strips/BS boxes to be fitted as per the ventilation drawings and instructions.	<input type="checkbox"/>	<input type="checkbox"/>	
BY-15* Seals	<input type="checkbox"/>	<input type="checkbox"/>	
BY-16* Ventilation plant in operation	<input type="checkbox"/>	<input type="checkbox"/>	
BY-X Additional, relevant self-inspection plans:	<input type="checkbox"/> Acoustics 6:2.5 <input type="checkbox"/> Ventilation 6:2.3-4 <input type="checkbox"/> Other...page(s)		

Miscellaneous: The floor ventilation plant (fans, dampers and pipes) must be accessible for inspection and servicing.

Remarks:

Town _____ Date _____

Signature / Quality manager/Installation manager _____

Name (please print): _____

Project:

Reference no.

Explanation of the inspection points on the previous page:

- BY-1** Any grouted-in wooden blocks/joists/ etc. are to be removed.
- BY-2** The subfloor is to be cleaned of organic materials, filler residues, excess bonding agent, etc. The surface is to be vacuumed. Final cleaning (vacuuming) is to be carried out immediately before laying of the floor decking.
- BY-3** The form and extent of fungicide treatment is to be determined by the expert appointed by the customer.
- BY-4** To ensure that sills are airtight, they are to be sealed along all the external wall using Nivell System sealers or equivalent. The seal is to be approved by an expert.
- * **BY-5** Where ventilation connections are required through intermediate walls, the openings are to be made at the bottom of the latter (as per ventilation drawings or instructions from the ventilation supervisor).
- * **BY-6** An approved sealing mastic (e.g. SIKA Fireswell) is to be used for pipe lead-throughs in firewalls .
- BY-7** Nivell System joists shall stand free of each other and from sills/walls. In most cases, the “framing joists” shall be 60 mm from walls.
- * If BS boxes are to be mounted away from walls (radiator pipes, etc.), then the distance between walls and “framing joists” shall be correspondingly increased at walls where AD strips are to be fitted.
- BY-8** Check that all Nivell screws are undamaged and firmly seated, with no play, on the subfloor. Using a saw or other cutting tool, protruding parts of Nivell screws are to be cut along the top surface of the joist. Do not knock the screw protrusions off with a hammer.
- * **BY-9** Channels and lead-throughs for pipes in the concrete slab and the walls are to be sealed.
- BY-10** Cracks and other damage in concrete surfaces are to be repaired using Nivell sealers or equivalent.
- BY-11** Insulation slabs shall rest on insulation carriers and not be in contact with concrete surfaces. The clad side of the insulation slab is to be at the bottom. The air gap beneath the insulation slab shall be at least 10 mm. Each slab shall be supported by at least 6 insulation carriers.
- * **BY-12** Check with the ventilation supervisor that the ventilation system is in place before the floor is closed up. See the separate inspection plan.
- BY-13** The air gap beneath joists should be at least 10 mm for standard floors and 5 mm for LP floors. (i.e. screws extended at least 10 and 5 mm respectively). Should the air gap be less than this, contact the ventilation supervisor. There must be no obstructions to the ventilation flow in the floor void. Pipes in the void can, for example, be held clear using plastic wedges. Holes in the ventilation pipe must not be blocked by insulation, joists or similar.
- * **BY-14** AD strips/BS boxes are to be fitted as per the ventilation drawings and installation instructions.
- * **BY-15** The general rule is that floor structures shall be sufficiently airtight that the relevant requirements are met. Joins in the floor decking are to be sealed using Nivell System sealers or equivalent. Pipe lead-throughs (and similar) in the floor decking are to be sealed. Gaps up into intermediate walls, etc. are to be sealed. Nivell System’s TM plank can be used to advantage here.
- * **BY-16** When the floor decking is finished, the ventilation plant shall be started at full speed and with all dampers open. Inform the Prästängen offices that the ventilation system is ready for adjustment.

* Only where ventilation is a part of the installation

Articles

Tools

ART NO	PRODUCT	DIMENSIONS
Standard tools		
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
Tools for anchor fitting		
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
Tools for use with screws		
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
Miscellaneous		
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
Supply air		
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
Exit air (pipe components are also available in 40 mm dim.)		
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)	
Fans/miscellaneous		
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	
Joists			
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	
Screws			
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 & 517 are available with a support plate, for permanent installation with bonding mastic (no drilling).</i>			
Anchors			
901	Concrete anchor		
910	Concrete anchor for acoustic screws		
926	Concrete anchor, industrial		
Screws			
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		
Insulation carrier			
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	
Insulation slabs			
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.

Simple • Safe • Flexible

The complete joist system



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

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



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



Moland byggevarer A/S
Strandveijen 16, dk 7800 Skive
Tel +45 – 96 14 50 00
Fax +45 – 96 14 50 99
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

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.

Floors • Walls • Ceilings