# **IVI-MetalCeiling** PROFESSIONAL SOUND INSULATION OF CEILINGS



Sound insulation in buildings has become a major focus of attention. Not only are the demands in this sector rising, the legal standards have also become considerably more stringent. So it comes as no surprise that there are more and more questions on how to achieve good sound insulation. Nevima has over 60 years of experience in sound insulation and offers solutions with various products. The IVI-Metal Ceiling is one of them.

### Description

An additional sound insulating ceiling is most effective for improving the sound insulation of floors and ceilings or flat roofs. The sound-insulating effect of suspended ceilings based on standard metal 60/27 C-studs is mainly due to its flexible characteristics. In order to maximize this sound insulation, it is necessary to completely decouple these metal frames acoustically from the support structure. All IVI-Ceiling Systems provide high airborne sound insulation and excellent impact sound insulation. There are four different systems with associated advantages. The IVI-Metal Ceiling Basic, R25 and DH (direct hanger) are acoustically decoupled from the existing ceiling and use standard metal C-studs. They are therefore suitable for fast and inexpensive assembly, flexible cavity depths and large spans. The IVI-Metal **Ceiling VD** (clear span) is attached solely to the surrounding walls and ensures complete acoustic decoupling without any attachment to the existing ceiling. As a result, it is only suitable for limited spans.

#### **System composition**

The IVI-Metal Ceiling Basic is the standard version. In this case, a ceiling with double 60/27 C-studs is used. The primary C-stud is hung rigidly on the existing ceiling with, for example, metal fasteners. The **IVI-Kruisverbinder Basic** acoustically decouples the lower and plate-bearing C-stud completely. The core of the IVI-Kruisverbinder Basic consists of a 13 mm permanently resilient felt, which ensures the acoustic decoupling.



Sound absorption material is placed above the C-studs.



Possible products for this are **IVI-Absorptiewol**, blown cellulose or a mineral wool. Then a plating is applied to the underlying C-stud of, for example, (double) plasterboard, gypsum fibreboard or a combination of plasterboard and board underlay.

It is very important that this plating is also decoupled at the edges with an **IVI-Metaalregel**. To this end, a 20 mm wide strip of 8 mm thick felt protrudes from both sides of the IVI-Metaalregel. The most common plating of  $2 \times 12.5$  mm plasterboard will rest against that felt.

The 5 mm cavity that remains is for the sealant filling, which makes the construction airtight.



### **Benefits:**

Easy, quick and pleasant to process
Light construction with high sound insulation values,
especially at low frequencies
Acoustically high-quality variant of the tried and tested
system of metal C-studs and U-channels
Sustainable
Made from reused and reusable raw materials
• The resilient properties of felt are not subject to ageing
Universally applicable

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## Soundproofing properties IVI-Metal Ceiling Basic

	Rw	ΔRw	RApop	∆RApop	l-lu	∆I-lu	l-co	ΔI-co
Wooden floor	25	-	21	-	-28	-		
with IVI-Metal Ceiling Basic*	60	35	49	28	6	34		
Concrete floor 140 mm	50	-	44	-			-9	-
with IVI-Metal Ceiling Basic**	73	23	66	22			+18	27

\*system including 220 mm cellulose-filled cavity or \*\* 200 mm IVI-Absorption and 2x12.5 mm plasterboard cladding. Reports available on request.

A deeper cavity and higher filling rate with the absorption wool gives an even higher sound insulation, especially at low frequencies.

The IVI-Metal Ceiling R25 is designed to achieve the maximum insulation value at low frequencies. With the IVI-Kruisverbinder R25, the felt of the IVI-Kruisverbinder Basic has been replaced by Sylomer R25. This results (at an optimal load of 9 kg/piece) in a very low natural frequency of 14 Hz. The remaining structure is identical to the IVI-Metal Ceiling Basic.

The **IVI-Metal Ceiling DH** has been developed to be applied where a limited cavity depth is available (from 70 to 115 mm).





The height-adjustable **IVI-Direct Hanger** is mounted directly to the existing ceiling. The plate-bearing C-stud is then clicked into the IVI-Direct Hanger. The core of the IVI-Direct Hanger consists of a 10 mm permanently resilient felt that provides an acoustic decoupling. The remaining structure is identical to the IVI-Metal Ceiling Basic.

The **IVI-Metal Ceiling VD** (Clear Span) can be applied for spans up to four metres. IVI-Metaalregels and standard C-studs create a decoupled post construction. The IVI-Metaalregel is applied to the walls on the long sides and **IVI-Akoestisch Band** on the short sides.

The IVI-Metaalregel is composed of two layers of acoustic felt and a metal U-channel. A sound absorption material should be placed between the posts and the ceiling. Possible products are **IVI-Absorptiewol**, blown cellulose or a mineral wool. The C-studs are then fitted with (double) cladding of, for example, plasterboard, gypsum fibreboard or a combination of plasterboard with board underlay. It is very important that this cladding is also decoupled at the edges. For this reason, a 20 mm wide strip of 8 mm thick felt protrudes from both sides of the IVI-Metaalregel. The most common plating of 2 x 12.5 mm plasterboard will rest on that felt. The 5 mm cavity that remains is for the sealant filling, which makes the construction airtight.

#### Soundproofing properties IVI-Metal Ceiling VD

	Rw	ΔRw	RApop	ΔRApop	DnT,A	∆DnT,A	LnT,A	∆LnT,A	
Wooden floor	30	-	28	-	34	-	79	-	
with IVI-Metal Ceiling VD*	67	37	55	27	70	36	46	33	
with IVI-Metal ceiling VD and Nevidek Plus	69	39	58	30	73	39	35	44	

\*system including 350 mm cellulose-filled cavity and 2x12.5 mm gypsum plasterboard plating, on-demand reports

Nevima's products have been used successfully for many years to insulate the sound burden from, for example, neighbours, the hotel and catering industry, cinemas, aircraft and traffic noise. Please refer to the references on our site.

#### A product of Nevima B.V.

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