

To Whom It May Concern

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Sound insulation performance of Hilti CP 606 / CFS-S ACR

Dear Madam/Sir,

The sound insulation performance of Hilti CP 606 / CFS-S ACR has been tested by the IFT Rosenheim according to EN ISO 140-1/2 and interpreted according EN ISO 717-1 as published in the report 16-001466-PR01 (PB Z1-K02-04-en-01).

The sound performance of a wall of the Hilti CP 606 / CFS-S ACR was tested in a joint. The result is given as $R_{S,W} (C;Ctr) \geq 64 (-2;-7)$ dB

According to the Expert Statement 17-001738-PR03 (GAS-E03-04-02) the value $R_{S,W}$ can be re-calculated to $R_{w,Wall}$ with joint according to the following formula – see page 5 in the report:

Calculation of $R_w + C_{tr}$

If the joint is combined with a building component (e.g. wall with area S and weighed sound reduction index + spectrum adaption term $R_w + C_{tr}$) and assuming the building component's area $S \gg$ than the opening area of the joint ($w * l$, w = joint width), for the associated joint length l and a reference length $l_0 = 1$ m the resulting sound reduction index + spectrum adaption term $R_{w,Wall}$ with joint + C_{tr} of the wall with joint to ceiling is calculated as follows:

$$R_{w,Wall \text{ with joint}} + C_{tr} = -10 \cdot \log \left(10^{\frac{-R_w + C_{tr}}{10}} + \frac{l \cdot l_0}{S} \cdot 10^{\frac{-R_{s,w} + C_{tr}}{10}} \right) \text{ dB}$$

To assess the acoustic insulation of a head of wall joint filled with CP 606 / CFS-S ACR can be done as follows:

1. Determine the sound performance of the wall construction provided by the drywall manufacturer, without joint.
2. Find for the nominal acoustic performance of the wall: Table 1, **Col 1**
3. Get the expected values with a traditional deflection head (**Col 2**) or Hilti CP 606 / CFS-S ACR installed (**Col 3**) from the same line.

Table 1

For the calculation example, the geometric data $l = 4 \text{ m}$ and $S = 10 \text{ m}^2$ were used as input data.

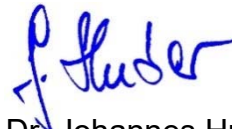
Col 1	Col 2	Col 3
Sound insulation of wall w/o sound transmission via joints $R_{w,Wall} + C_{tr}$	Sound transmission through a 100 mm single stud wall including the transmission via conventional joint (deflection head) $R_{s,w} + C_{tr} = 35 \text{ dB}$ $R_{w,Wall} + C_{tr}$	Sound transmission through the wall including the transmission via a flexible joint filled with Hilti CP 606 / CFS-S ACR $R_{s,w} + C_{tr} = 57 \text{ dB}$ $R_{w,Wall} + C_{tr}$
40 dB	36 dB	40 dB
42 dB	37 dB	42 dB
44 dB	38 dB	44 dB
46 dB	38 dB	46 dB
48 dB	38 dB	48 dB
50 dB	39 dB	50 dB
52 dB	39 dB	51 dB
54 dB	39 dB	53 dB
56 dB	39 dB	55 dB
58 dB	39 dB	56 dB

Aside the example, you can assess every wall independent of board type and if insulation is used or not. You just use the given value of the wall and refer to the same line to get the corresponding value for the CP 606 / CFS-S ACR.

With best regards



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