



Use of Resilient Channel in Floor Assemblies with Two Layers of Gypsum Wallboard

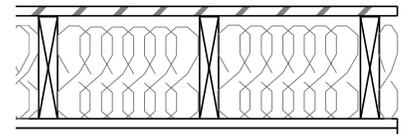
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Building Note

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A myth has existed in the construction industry that resilient metal channel is incapable of supporting multiple layers of gypsum wallboard in a ceiling configuration. We are not sure of the origin of the myth, but there is substantial evidence demonstrating that resilient channel attached to the underside of floor joists can successfully support two layers of 1/2" or 5/8" gypsum wallboard. We have a test report from US Gypsum, a longstanding manufacturer of resilient channel, demonstrating that multiple layers can clearly be supported. The Institute for Research in Construction, a division of the Canadian National Research Council, has performed sound isolation tests on both one and two layers of wallboard supported from resilient channels. In fact, this construction is listed in floor assemblies in the Canadian National Building Code as F9, F11, F15, F21, F28, F30, F34, F38, F45, F47, F51, F55 and F59 floors.

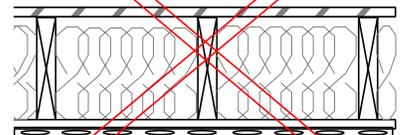
We note that some contractors or suppliers will try to convince you to install one layer of wallboard directly to the underside of the joists, then strap that with resilient channel and add a second layer to the resilient channel. We strongly recommend against this as the acoustical benefits of the channel and second layer are totally wasted.

As an example, in the Canadian National Building Code an F4d floor is described as a subfloor of 15.5 mm plywood, OSB or waferboard, or 17 mm tongue and groove lumber on 38x235 mm wood joists spaced at not more than 600 mm o.c. with absorptive material in the cavity and two layers of 12.7 mm Type 'X' gypsum wallboard on the ceiling side. This floor has a Typical Sound Transmission Class Rating (STC) of 36 and Typical Impact Insulation Class Rating (IIC) of 32.



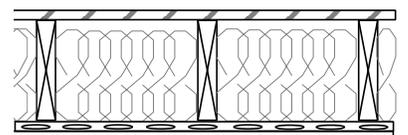
STC 36 IIC 32 F4d

If the F4d floor assembly is modified by the addition of a layer of resilient channel between the two layers of 12.7 mm Type 'X' gypsum wallboard the assembly becomes a type F7d floor which has a typical STC Rating of 37 and typical IIC rating of 30.



STC 37 IIC 30 F7d

However, if the resilient channel is placed between the two layers of gypsum wallboard and the floor joists, with a 400 mm spacing on the channels, the assembly becomes a type F9g floor which has a typical STC Rating of 54 and typical IIC rating of 47.



STC 54 IIC 47 F9g