

## SOUND-DEADENING BOARD

### HELPS SIGNIFICANTLY REDUCE NOISE POLLUTION

The aim of sound-deadening is to reduce distracting or irritating noise, rather than "soundproofing" to totally eliminate sound.

Economically preventing noise transmission through an interior wall was not an easy problem to solve. Thick walls of dense materials can stop sound, but, at a high cost and with structural problems created by unusually heavy walls.

However, sound-deadening materials and techniques are available now to builders who want to offer this significant benefit to noise pollution-conscious buyers.

#### What is Sound-Deadening Board?

Sound-deadening board is a specially made fiberboard product designed for use in wall systems where sound control between rooms is desired. It is usually identified with the words "sound-deadening board" on each sheet or package to distinguish it from other fiberboard products.

#### Take the "Party" Out of Party Walls

Lightweight panels of sound-deadening board are specially made to trap noise passing through walls from room-to-room. The 1/2"-thick, 4' x 8' panels work on the principle of combining dissimilar materials so that

each accomplishes a different acoustical objective. Sound-deadening board is designed for use under gypsum wallboard. The heavy wallboard provides mass which retards the passage of sound, while the lightweight sound-deadening board panels act as an absorptive material which traps noise.

Tests at nationally known acoustical laboratories have shown that when sound-deadening board is combined with gypsum wallboard, the resulting wall is acoustically superior to walls made with

- two layers of sound-deadening insulation board alone
- two layers of gypsum wallboard alone

#### On-Site Practices

It should be understood that the Sound Transmission Class (STC) values obtained in actual practice will depend upon many construction factors in addition to the design of the partition itself. Attention must be paid to workmanship and construction details, and to acoustical characteristics of the adjacent floor, wall, and ceiling structures which can provide "flanking paths" for sound transmission around a given partition. To be most effective, the perimeters of the walls must be sealed to avoid sound leaks.



### SOUND TRANSMISSION CLASS (STC)

Sound Transmission Class (STC) is widely used as a performance criteria. STC provides a single number which combines the wide range of frequency data points. Many new types of lightweight walls have low values in the middle frequency range as compared to the old solid masonry wall.

STC numbers have been adopted by acoustical engineers as a measure of the resistance of a building element, such as a wall, to the passage of sound. The higher the number, the better the sound barrier.

How do conventional walls using 2" x 4" stud framing rate by STC? Based upon tests, a typical based wall of gypsum wallboard, using 2" x 3" or 2" x 4" studs, will have an STC of only 38.

The following examples show the approximate effectiveness of walls with varying STC numbers.

**30** Loud speech can be understood fairly well

**35** Loud speech can be audible but is not intelligible

**42** Loud speech is audible as a murmur

**45** Some loud speech is barely audible

**48** Must strain to hear loud speech

**50** Loud speech is not audible

## DETAILS

Variations can be adapted from these basic wall systems.

Fig. A – STC 49\* steel studs 24" O.C.

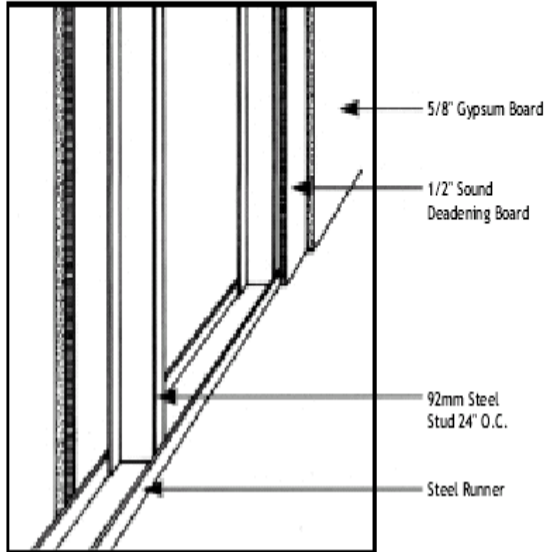


Fig. C – STC 56\* 2" x 4" studs staggered 24" O.C.

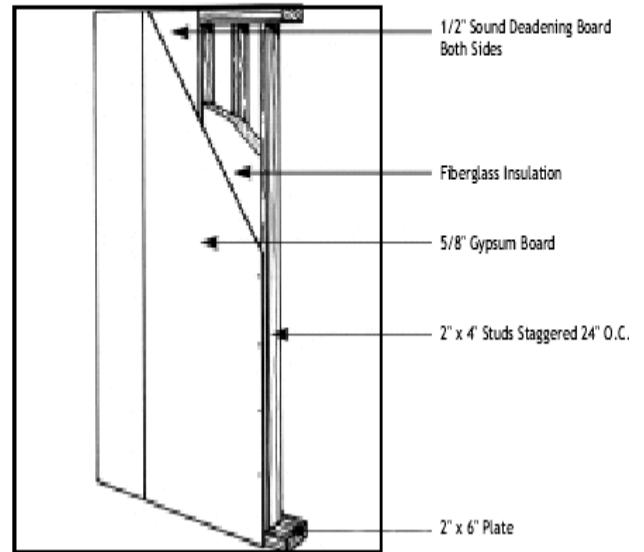
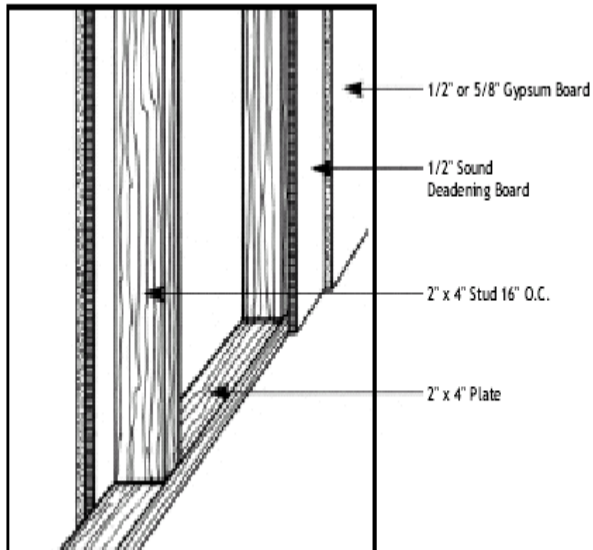


Fig. B – STC 39\* 2" x 4" studs 16" O.C.



\*Contact AFA for actual test results