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[SJMA SOUND PROOFING RECOMENDATION]

Abstract: This presentation is a generalized overview of the multiple strategies that can be implemented to create some separation between the sounds generated in each of SJMA's music rooms. Each strategy or system will be given a brief description and then a final recommendation will be given on what is the most economic and efficient solution.

Door Soundproofing Kits

Overview: There are multiple door soundproofing kits available on the market, however they all function in the same way. The general idea is to target the weak sections of the door: the edges. The seals are screwed into the jambs and the bottom of the door to essentially create a seal around the door. The seals are fairly easy to install and are a comparably discreet method of sound blocking.



Figure 1: Door Soundproofing Kit (Source: <http://www.asistorefront.com/p-221-soundproof-door-kit-standard.aspx>)

Cost: The heavy duty and industrial kits will range up to \$600. Lower level kits will cost \$280.

Acoustic Door Covers

Overview: Acoustic door covers aim to decrease the amount of sound that passes through the door by adding a layer of sound proofing material to the door. The covers are essentially pieces of soundproof material that are designed to be mounted directly on the surface of the door. They are available in a variety of thicknesses, and colors.



Figure 2: Acoustical Door Covers (source: <http://www.atsacoustics.com/item--ATS-Acoustic-Panel-24x24x2--1000.html>)

Cost: For a typical door the cost will typically range from \$135 to \$160 depending on thickness and type of material used.

Acoustical Soundproofing Caulk

Overview: Acoustical soundproofing caulk is a substance that is applied using a glue gun to seams and cracks. It is low in odor and is very easy to apply, however it's dull grey color is not terribly pleasing, aesthetically.



Figure 3: Acoustical Soundproofing Caulk (source: http://www.greengluecompany.com/noiseproofing_sealant.php)

Cost: Approximately 40 feet worth of sealant are in each tube. Tubes typically come in packs of 6 or 12. A 6 pack generally ranges between \$45 to \$60.

Solid-Core Door

Overview: By changing from a hollow door to solid door, higher levels of sound blocking can be achieved. Solid doors are very easy to obtain and could be installed on the existing door hinges.



Figure 4: Solid-Core Door (source: <http://www.wooddoorsvancouver.com/category.php?id=43>)

Cost: Prices vary according to design and material. Most simple solid doors range from \$100 to \$250.

Soundproofing Foam

Overview: Soundproofing foam works on the same basic principle as the acoustical door covers, however the foam can be produced much more cheaply and therefore is much more cost effective than the acoustical door covers. It only comes in a few basic colors and may not look as good as the acoustic door covers.



Figure 5: Soundproofing Foam (<http://www.economyfoamandfuton.com/futon/ProdImages/eggcratefoam-large.jpg>)

Cost: Per door the cost for covering it in foam would range anywhere from \$50 to \$140. Typically most foams lean towards the \$50 side of the scale.

Cork Underlay

Overview: The cork underlay comes in 2 foot by 3 foot sheets. Cork is an excellent sound damper that is reasonably easy to install. Aesthetics wise the cork underlay will look very similar to a cork board.



Figure 6: Cork Underlay Roll (Source: http://www.flooringsupplyshop.com/images/cork_q_heet.jpg)

Cost: Sheets come in 78 square-foot rolls at a cost of \$100. There is enough material in one of these rolls to completely cover 3 doors.

Price Breakdown

Case 1 (Soundprooffoam.com)	Size	Price (\$)
Soundproof foam	1/4in x 48in x 54in	140
Soundproof foam2	1in x 4ft x 8ft	55

Case 2 (SONEX)	Size	Sheets per box	Cheapest price (\$)
Classic	24x48	8	240
One	24x48	8	340
Mini	24x48	12	172
Valueline	24x48	8	195

The valueline seems most feasible for this situation. I covers 64sq ft. A complete list of the prices can be found at <http://www.silentsource.com/efs/afoams-sonexpricing.html#valueline>. *Foam can be bought from somewhere and textured in a similar manner or it may just be covered.

Case 3 (RONA)	Size	Price(\$)
Softboard	4ft x8ft x 0.5in	10 - 25
Styrofoam	2in x 24in x 96in	10 - 50

Case 4 (Door Sealing)	Size	Price (\$)
Door Sealant kit		200-500
Solid Regular Door		100 -250
Acoustic Door Cover		300 -600
Single Door Seal	Bottom Only	20-50
Caulk	6 30oz bottles	45-60

* Installation costs to be determined

* Door sealing may not do much for the sound. The door can be covered by the same material as the wall.

Case 5 (foamshop)	Size	Price (\$)
Acoustic foam 1	2in x 30in x 80	49
Acoustic foam 2	3in x 30in x 80	69

Case 6 (cork)	Size	Price (\$)
Soundproofing Cork Underlay	3ft x 2ft x 12mm (78sft)	99
Cork Underlay 1	3ft x 2ft x 6mm (150sft)	90
Cork Underlay 2	3ft x 2ft x 3mm (300sft)	90

Final Recommendation

Our final recommendation for the nursery and the changeroom is to purchase and install 3 acoustic sound covers. The acoustic sound covers provide excellent sound blocking, are available in custom colors and include their own fasteners. They are available for \$165.00 each. We also recommend door seals for each door, full door kits are quite expensive, however, bottom-door-only seals can be found for much cheaper. These seals can be purchased from Walmart for \$20. In addition to these measures if extra funding is available, a solid door should be considered for the nursery. \$99 is the minimum that can be spent on a solid door.