“O.K., we’ll flip for it. Heads I have to do it, tails you have to do it.” Sounds like a conversation between two kids arguing over who has to take out the trash. But in actuality, it was the type of conversation that took place for years at a large plastics manufacturer in the Northeast until they called Sound Seal.

Like other manufacturers, this plastics producer has a certain amount of waste inherit in the making of a product. Fortunately, they are able to recycle waste. Waste is loaded into a granulator which grinds the plastic into tiny pellets. Eventually these pellets are reused in a finished product. The problem was that no employee wanted to go near the granulator. It was the loudest machine on the shop floor peaking at 110 dB(A).

Finally, the noisy granulator became too much for management to deal with. Complaints from shop employees became more frequent, waste piled up meaning that potential raw materials were being squandered and the threat of an insurance claim or an OSHA violation grew every day. Something had to be done quickly.

Company management figured that the best way to overcome the problem was with some type of acoustical enclosure, either metal or one constructed from composite materials. A metal enclosure would help reduce noise levels once the proposed design provided no protection for the operator when loading the machine. Another disadvantage of the metal enclosure is that access to the machinery would have been limited.

Sound Seal applications engineers offered an enclosure design featuring their BBC-13-2” composite material, a combination sound absorber and noise barrier. The composite is made up of a 1 lb/sq.ft. reinforced loaded
vinylnoisebarrierand2”thickquiltedfiberglasssoundabsorber.Typically,a1”thickabsorberisputontheinteriofofreinforcedbarrier.Becauseoftheextremeconditionsinthiscase,SoundSealengineersutilizedthe2”thickmaterial.

TheBBC-13-2”compositegivesoverallnoiseprotectioncomparabletothemetalconclosuresinceofSoundSealextensivefabricatingcapabilities,theenclosurecouldbecustomizedtometeveryspecificationoftheplasticsmanufacturer.

AcriticaldesignfeaturethatSoundSealengineers developedwasafeedflapthatgavetheoperatorasubstantialamountofprotectionwhenloadingthegranulator.Prior to the installation of Sound Seal’s enclosure, the operator was subjected to 110 dB(A) of noise at close range. Continuous loading of the granulator without hearing protection would have been disastrous. With the new enclosure featuring the feed flap, an operator no longer needs hearing protection.

SoundSealengineersalsovercometheconcernthe companyhadaboutaccesstothemachine.Thedouble curtaintrackandhardwaredesignallowsaccessatanypointintheenclosure.Anotherkeydesignfeatureistheventilation system.Toooften,thetinstallationofaroofpanelmeans sacrificingventilationforenhancedacousticalperformance.

Theideaof“onestopshopping”atSoundSealso appealedtotheplasticsmanufacturer.Manynoisecontrol companiesonlysellthematerialswhichcomprise theenclosure.Thesecompaniesleaveittothecustomer tochonthesewho cansuppliethestructuralframework fortheneutralandhandletheinstallation.SoundSeal hasitsoownlineoffree-standingorsuspendedstructural supportsystems, and an installation team. In fact, this enclosure was installed in just four hours.

Employee response to the enclosure has been tremendous. Loading and running the granulator is no longer the dreaded task it once was. Consequently, waste no longer piles up and materials are quickly recycled. The granulator is finally the productive machine management always hoped it would be.

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