



and Materials

TIPS

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Because of the large quantities of materials it takes to build and maintain our highway system, TxDOT has the opportunity to recycle large amounts of material of various types that would otherwise have to be disposed of, either by landfilling or other processes. While this is a usually good practice for environmental reasons, we have to be sure that not only does the recycled material perform the engineering function of the material it replaces, but also that it does not create a long term threat to our environment or public health in the place where we use it.

To address the environmental issue, we have Departmental Material Specification (DMS)-11000, *Evaluating and Using Non-Hazardous Recyclable Materials (NRMs) Guidelines*. The department developed DMS-11000 as a guide to evaluate and confirm that liability risks posed by the use of an NRM are minimal. TxDOT requires that NRMs be certified that they have undergone an evaluation in accordance with DMS-11000.

DMS-11000 addresses recycled materials that fall into several classes. The first is the list of "established" NRMs. These materials have been used extensively by TxDOT, so they are now familiar and common. The high level of confidence allows these materials to be used without any special documentation, provided they have not come into contact with any hazardous materials.

Knowledge of the source of the material is the key to determining this. For example, recycled glass cullet from bottle recycling is more likely to be free of hazardous contaminants than glass generated from the recycling of florescent and high intensity discharge lamps, which is often contaminated with heavy metals such as mercury. Crushed concrete from a known source such as a highway project may be free of hazardous constituents, while crushed concrete originating from chemical facilities or spill sites may contain hazardous constituents.

Another class of NRM addressed by DMS-11000 is one that appears on the Material Producer List (MPL) for recycled materials. In this case, a processor of the recycled material has shown us a history and ongoing process of environmental evaluation of their product which demonstrates its suitability. These materials may be used as if they are established NRMs, without any other special documentation.

Note that both of these classes of product were previously required to be reported for each project. The main reason for this was that the use of recycled materials would qualify the contractor for reduced retainage on the project. Recent policy changes have eliminated retainage, so the documentation of these NRMs for environmental approval is no longer required.



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Other recycled materials, which are neither in the list of established NRMs or on the MPL, or which may be contaminated with hazardous materials, require an environmental evaluation before they may be used. The requirements for this evaluation are described in DMS-11000.

It is important to note that DMS-11000 provides evaluation criteria for environmental suitability only. All materials used, whether or not they are recycled, still have to meet the engineering specifications for their application.

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