



# Emerald Eco-Label EPD Tool Instructions

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## Purpose of this Document

These instructions, paired with the EPD Tool Data Gathering sheet, are intended to introduce you to Environmental Product Declarations (EPDs), and to guide you through the full process of creating EPDs, from initial user sign up, to final document creation. You may want to have the EPD Data Gathering sheet open while going through these instructions.

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## About EPDs and the Emerald Eco-Label Tool at AsphaltEPD.org

### What are EPDs?

An Environmental Product Declaration (EPD) is a Type III Environmental Label as defined in [ISO Standard 14025:2006, Environmental Labels and Declarations](#). EPDs communicate the environmental impacts of a product or service using a [Life Cycle Assessment \(LCA\)](#). The process used to develop an EPD ensures consistent data collection, analysis and reporting requirements, supported by third-party verification. This ensures the reliability of the information communicated through an EPD. Typically, an EPD development process adheres to various international standards; chief among them is the ISO 14025 standard.

### What Is the Purpose of an Asphalt EPD?

The goal of an asphalt EPD is to communicate the environmental impacts of creating one ton of an asphalt mix. Several sustainability and green construction rating systems now require or request EPDs for certain projects, including Greenroads and LEED.

### Who Decided What is Required for an Asphalt EPD?

The Product Category Rules (PCR) Committee, comprised of industry representatives and LCA professionals working in concert with the National Asphalt Paving Association (NAPA), determined the scope, functional unit, assumptions, and required inputs for an Asphalt EPD. The PCR Committee also ensured that the PCR for asphalt pavement and the underlying LCA met the requirements set forth by ISO.

### What is the Functional Unit?

The functional unit for asphalt is one short ton of mix as it leaves the manufacturing plant. The EPD is therefore a cradle-to-gate measurement of environmental impacts, including the phases of raw material extraction, material transport, and manufacture. This means it does not include the impact of later stages such as use and end-of-life disposal or recycling.

### What is Special About an Asphalt EPD?

Asphalt is one of the first industries to create a software tool that allows manufacturers to enter their own data and make EPDs, dramatically decreasing the cost to individual manufacturers to create EPDs for their asphalt mixes.

## How to Create an EPD

### Is the data safe?

As you move through the creation of an EPD, it is necessary to enter data about your plant's energy usage, material usage, and mix design. The Emerald Eco-Label tool has

been designed specifically to safeguard sensitive data. It saves, stores, and processes your data according to the underlying algorithms of the LCA without being viewed by a person. Additionally, if any data verification must occur (for example, your company has unusual values for energy usage), any third-party verifier is bound by NDA to not release or discuss your data except in the final, averaged formats of environmental impacts. Finally, once you have created an EPD, all data in the EPD itself has been passed through the underlying LCA algorithm, effectively obscuring any details about your plant's specific operations, while still allowing you to meet the requirements for creating an EPD, and even giving you an opportunity to showcase your plant's sustainability.

### Overview of EPD Creation

EPD creation consists of five steps:

1. Enter company data (Organizations)
2. Enter plant data (Production Facilities)
3. Enter data about your suppliers (Material Sources)
4. Define a mix (Mix Definitions)
5. Create an EPD for the mix (Product Declarations)

### Step 0: Creating an Account

To begin the process of using the EPD Tool, you'll first have to create an account. Click on "Create Account" on the left sidebar (Figure 1).

Once you are logged in, the sidebar menu updates to guide you through the steps of EPD creation (Figure 2).

If you need to change details of your account, you can access them by clicking on the red arrow icon in the upper right of the EPD Tool site.

### Step 1: Creating an Organization (lines 3-6 of EPD Data Gathering)

If you are the first in your Organization to create an account, you will need to enter information about your Organization. At this time, you will also designate one person who will be the Technical Lead for your Organization. Your Technical Lead must have gone through the webinar-based training (more information about this in the Granting User Access section). If someone else is already the Technical Lead for your company, they will be able to grant you access to your organization's EPD Tool account.

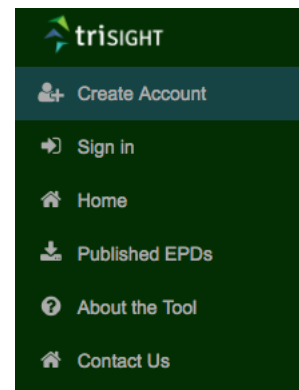


Figure 1: Left Sidebar

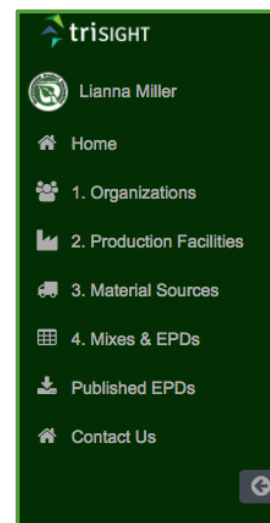
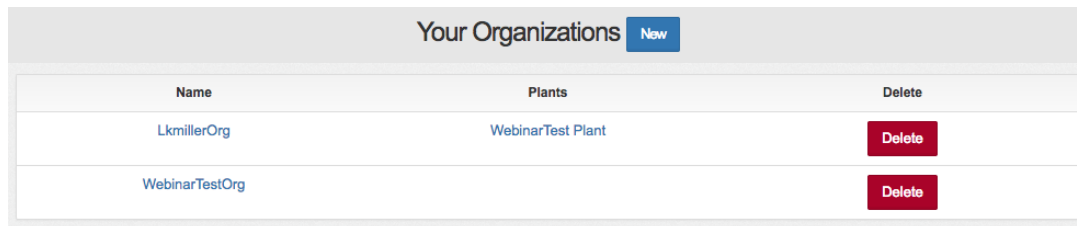


Figure 2: Left Sidebar Guides EPD Creation

For most manufacturers, your Organization is your company. For some organizations with large parent companies, this may be your division or section. A single user can be a part of multiple Organizations (useful for very large Organizations).

For the Organization level data, typically you will be entering the name and address of your Technical Lead, as well as for your billing department. You will also be asked for your NAPA (National Asphalt Pavement Association) login credentials, if your organization is a member of NAPA. Contact NAPA directly if you do not have your login credentials.

You can edit an organization by clicking on the name of the organization.



Name	Plants	Delete
LkmillerOrg	WebinarTest Plant	Delete
WebinarTestOrg		Delete

Figure 3: The Organizations page

### Granting User Access

The Technical Lead, the person who leads EPD creation at your company (often a plant manager, or a sustainability or LCA expert) will have administrative authority to grant user access to different levels of the EPD Tool, including allowing users to add other users. All Technical Leads must first go through the two-stage, webinar-based training offered by NAPA in order to meet data quality requirements. Once the person who will be Technical Lead has been through the webinars, they will be granted the ability to create Organizations and regulate other user's capabilities within their Organization(s).

To change a user's access, they must have already created a user account. To access user settings, go to the Organizations page, and click on the name of your Organization (Figure 3). This will take you to the account page for that particular Organization (Figure 4). Here you can upload your company's logo, view contact information, Diamond Plant status, and a list of authorized users for that Organization.

Organization Authorizations							Edit
<i>Manage high-level user permissions for your organization.</i>							
User	Edit Organization Details	View All Plants	Edit All Plants	Add Plants	Delete Plants	Add Users	
LTest MTest lkmiller@mtu.edu	✘	✓	✘	✓	✓	✓	
Benjamin Ciavola btciavol@mtu.edu	✓	✓	✓	✓	✓	✓	
L. Miller lianna@trisightengineering.com	✓	✓	✓	✓	✓	✓	

Plant Authorizations							Edit
<i>Manage plant-level user permissions for your organization.</i>							
Plant	User	View Plant	Edit Plant Details	Edit Primary Data	Edit Mixes	Edit Sources	Add Users
LkmillerOrg - WebinarTest Plant	L. Miller lianna@trisightengineering.com	✓	✓	✓	✓	✓	✓

Diamond Plants			
Plant Name	Contact	Address	Renewal Date

Figure 4: Editing an Organization

Clicking the blue “Edit” box will allow you to change the authorization level of current users, and add new users (Figure 5). Enter the email address of the new user you want to add into the empty text box on the last line of the user list to edit their access. You can choose to allow a user to add other users, edit the organization, and view, and edit plants. Currently those settings apply to all plants within an Organization. You may also choose to allow a user to create new plants and delete them.

If you are a member of more than one Organization, you can toggle which Organization you are viewing on the Production Facilities, Materials Sources, and Mixes & EPDs pages by selecting the blue font pulldown menu on the upper left of all of those pages.

Manage users for LkmillerOrg									
User *	Can view org	Can edit org	Can view all plants	Can edit all plants	Can add plants	Can delete plants	Can add users	Has been trained	Delete
<input type="text" value="lkmiller@mtu.edu"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="text" value="btciavol@mtu.edu"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="text" value="lianna@trisightengineeri"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[Save Changes](#)

Figure 5: Controlling User Roles

### Step 2: Creating a Production Facility (lines 7-10 of EPD Data Gathering)

Creating a plant is as simple as entering its physical location and a contact person for EPD creation for that plant. Click on the 2. Production Facilities link on the sidebar, and then on the “New” button to enter this data. Once entered, the new plant will appear on the Production Facilities page. At this point, you may now purchase a license for the Production Facility.

### Purchasing a License for a Production Facility

A license is required to create EPDs for mixes made at a given production facility. Once a license is purchased, you may make an unlimited number of EPDs for mixes made at that plant. Be aware that because of regional variances in power production and differences in material suppliers, an EPD created for one facility will not be valid for any other plant.

Pressing the Purchase License button will take you to the purchase page. NAPA members have a different rate from non-members as a benefit of their membership. Choose the appropriate plan, and you will be routed to NAPA’s secure payment site.

Thank you for purchasing a license for WebinarTest Plant. Please enter primary data for this facility by clicking on the Enter Data button in the corresponding row.

Name	Payment	Plant Data
WebinarTest Plant	<input checked="" type="checkbox"/>	<input type="button" value="Enter Data"/> <input type="button" value="Delete Plant"/>

Figure 6: Purchasing a License

If you encounter problems during payment, contact NAPA directly for payment assistance.

To meet the ISO requirements, the PCR must be reevaluated by January of 2022. This means that all EPDs are valid through January 31, 2022, regardless of when they are created. As a result, the cost to purchase a license is on a sliding scale based on how long your facility’s EPDs will be valid. See Table 1.

Table 1: Cost Per Plant for Unlimited EPDs

Year	NAPA Members	Non-members
2017 (access for 5 years)	\$1000	\$1250
2018 (access for 4 years)	\$1000	\$1250
2019 (access for 3 years)	\$900	\$1050
2020 (access for 2 years)	\$700	\$800
2021 (access for 1 year)	\$400	\$450

Next you will enter the plant resource use data. **It is strongly recommended that the EPD Data Gathering sheet is completed before this step.** Alternately, the relevant portions of the EPD Data Gathering sheet are replicated in this instruction package, and you may gather the data using this document as a guide.

### Entering Production Facility Resource Usage

In order to characterize the environmental impacts of the creation of one ton of mix (the end goal of an EPD), the LCA requires analysis of the energy and water use at the production facility. Once you have purchased a license for a plant, you can access the data entry page by clicking on the “Complete” button. Refer to the EPD Data Gathering sheet, lines 11-40 (reproduced in Table 2), for guidance on individual entries.

If at any time you wish to save and exit, press the “Submit” button at the bottom of the page. The data you have entered will be saved, and the plant marked as “Incomplete” on the Production Facilities page. To complete the resource usage, click the “Incomplete” button.



Table 2: Data Needed to Complete a Production Facility

Recorded Amount:	Production Facility Resource Use	Units	Comments & Help
	<u>Annual Production &amp; Electricity</u>		
	Data collection start date		All quantities reported in the Production Facility section will be over a cumulative period of 12 months, within the last five years. Enter the start date of the twelve month period during which the data was recorded. The reported data for all the subsequent categories (in Production Facility) must have been measured for the same twelve month period starting from this date.
	Total Asphalt Mix Sold (per year)	US Short Tons	This must be over the same 12 month period as all the other plant data
	Total Water	Gal	If you have exact (metered) water use data, enter it here. Only water used in asphalt production and dust control should be included.
	Electricity: Grid Power	kWh	Enter total line electricity use for the 12 month period.
Automatically computed from ZIP code	eGRID subregion		This portion will self populate given the zip code of your plant. If you are interested, more about eGRID regions may be found by entering your zip code into the EPA's power profiler: <a href="https://www.epa.gov/energy/power-profiler">https://www.epa.gov/energy/power-profiler</a> Your region will appear in bold below the US map.
	Electricity: Solar	kWh	If your plant uses onsite solar sources, report the estimated energy contribution from these sources during your 12-month period here. Note that this is only onsite solar! The percentage of solar from your electricity provider is already calculated during the eGRID step.
	Electricity: Wind	kWh	Electricity generated by onsite wind energy sources. As with solar, only wind power sources that are at your production facility should be accounted for here. The percentage of wind from your electricity provider is already calculated during the eGRID step.
	<u>Onsite Generator</u>		If your plant uses a generator, report the type and total of fuel used to power it here. If you do not separate diesel (or biodiesel) generator use from other diesel uses (e.g. onsite

Recorded Amount:	Production Facility Resource Use	Units	Comments & Help
			equipment like loaders), put ALL diesel (or biodiesel) used per year here.
	Diesel	Gal	
	Biodiesel	Gal	
	Biodiesel Grade		Report biodiesel grade as percent biodiesel in a biodiesel/petroleum diesel mix. E.g. If you are using B20 Biodiesel, enter "20" as the biodiesel grade
	<u>Burners</u>		Enter the amount of each energy source used to power the burners at the plant during the 12 month period. Enter "0" if you do not use a certain type of fuel. Check that you are correctly reporting units.
	Natural Gas	ccf, Mcf, MMbtu	Check that you have chosen the correct units -- this is one of the most common mistakes in the EPD creation process.
	Propane	Gal	
	Diesel	Gal	
	Biodiesel	Gal	
	Biodiesel Grade		Report biodiesel grade as percent biodiesel in a biodiesel/petroleum diesel mix. E.g. If you are using B20 Biodiesel, enter "20" as the biodiesel grade
	Recycled Fuel Oil		
	<u>Oil Heater</u>		Enter the amount of each energy source used to power the oil heaters at the plant during the 12-month period. Enter "0" if you do not use a certain type of fuel. If you do not track the fuel usage of the oil heater separately, enter the usage under the "Burners" section.
	Natural Gas	Mcf or MMbtu	Check that you have chosen the correct units -- this is one of the most common mistakes in the EPD creation process.
	Propane	Gal	
	Diesel	Gal	
	Biodiesel	Gal	
	Biodiesel Grade		Report biodiesel grade as percent biodiesel in a biodiesel/petroleum diesel mix. E.g. If you are using B20 Biodiesel, enter "20" as the biodiesel grade
	Recycled Fuel Oil		

Recorded Amount:	Production Facility Resource Use	Units	Comments & Help
	<u>Equipment</u>		Enter the amount of each energy source used to power equipment (e.g. Loaders) at the plant during the 12 month period. Enter "0" if you do not use a certain type of fuel. If you do not track the fuel usage of the equipment separately, enter the usage under the "Onsite Generator" section if diesel, and "Burners" section if natural gas.
	Diesel	Gal	
	Natural Gas	Mcf or MMBtu	Check that you have chosen the correct units -- this is one of the most common mistakes in the EPD creation process.

Next you will enter your material suppliers.

### Step 3: Enter Material Suppliers (lines 44-78 of EPD Data Gathering)

In the EPD tool, materials are split into four categories:

1. Binders (including additives and modifiers added at the terminal)
2. Aggregates
3. Binder additives
4. Mix additives

To create a material in any of these categories, you will first have to create a supplier for the material. Click on the “New” button to the right of the type of material you’d like to create (Figure 7).

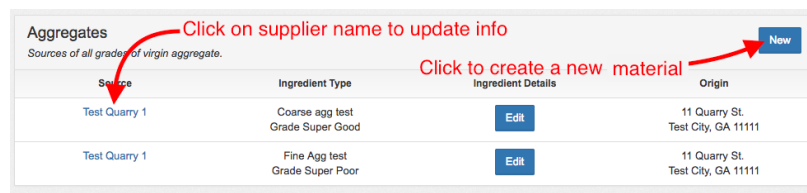


Figure 7: Creating a New Material

Then click on the New Supplier button on the right side of the page (Figure 8). Enter information about your supplier, and then click submit.

### Define a New Binder

Create a new source

**Select Source**  
Select a supplier company. Please ensure a company has not already been defined before adding a new supplier.

Sources already made will appear in this menu

**Source\***

✓ -----

Test Quarry 1 in Test City, GA

ABC Additive Corp. in test city, GA

UPPCO in Test City, AK

Webinar Test Refinery in Refinery City, GA

**BINDER DETAILS**

**Ingredient name\***

**Description**

Use a unique name (it will appear later in dropdown menus)

Figure 8: Creating a Material & Source

Refer the EPD Data Gathering sheet, lines 44-78, or Table 3 for guidance on individual entries. Take note of the following distinctions:

1. Binder additives are any additives put in the binder *at your production facility*.
2. If your binder is modified at the terminal, you would enter this when you create the binder rather than creating it under the binder additive category. See the Binder section of Table 3 for more info and Figure 9 for illustration.
3. Mix additives are additives put directly in the mix, like fly ash or fibers.
4. RAP and RAS will be added during the next step, Mix Definition.

**Additives and Modifiers** What percent of the binder mass is the additive?

<b>Additive or Modifier*</b>	<b>Percent of Binder by Mass*</b>
Plastic - Ethylene-vinyl acetate (EVA)	.2 % <input type="button" value="remove"/>
<b>Additive or Modifier*</b>	<b>Percent of Binder by Mass*</b>
<div style="border: 1px solid #ccc; padding: 2px;"> <p>✓ None</p> <p>Block Copolymer - Styrene-butadiene-styrene (SBS)</p> <p>Block Copolymer - Styrene-isoprene-styrene (SIS)</p> <p>Miscellaneous - Silicone</p> <p>Natural Latex - Styrene-butadiene rubber (SBR)</p> <p>Plastic - Ethylene acrylate copolymer</p> </div>	<input type="text"/> % <input type="button" value="remove"/>

Select the type from the pulldown

Click here to include more additives

Figure 9: Additives & Modifiers Added at the Terminal

Table 3: Data Needed for Materials & Sources

Recorded Amount	Materials & Sources	Comments & Help
	<u>Binders</u>	You may enter multiple binders; This sheet has just one in the interest of space.
	Source Name	What is the name of your supplier?
	Contact Name	The name and contact information of a person at the supplier is required in the case of a data verification audit (rare). This contact data will remain confidential at all times, and they will not be contacted except in the case of a material data audit.
	Contact Email	
	Source Physical Address	This is used to verify the physical distance travelled by the binder to get to your production facility in the case of a data audit.
	Ingredient Name (Binder)	This is the unique name of this binder.
	Description	This is a non-required field where you may make notes about the particulars of the binder.
	Additive or Modifier	If your binder is modified AT THE TERMINAL, select from a pulldown of typical binder additives or modifiers. Multiple modifiers may be entered here. If you modify your binder yourselves at your plant, enter that in the Binder Additives section below, starting at row 62.
	Percent of Binder by Mass	Enter the percentage of the binder (by mass) of each modifier or additive. Typical values are 0.1 to 1.0%. Again, only enter additives or modifiers added at the terminal.
	<u>Aggregates</u>	You can (and probably will enter multiple aggregates; This sheet has just one in the interest of space.
	Source Name	What is the name of your supplier?
	Contact Name	The name and contact information of a person at the supplier is required in the case of a data verification audit (rare). This contact data will remain confidential at all times, and they will not be contacted except in the case of a material data audit.
	Contact Email	
	Source Physical Address	This is used to verify the physical distance travelled by the aggregate to get to your production facility in the case of a data audit.
	Aggregate Grade	This is the unique name you use to refer to this aggregate at your production facility.
	Description	This is a non-required field where you may make notes about the particulars of the aggregate.
	<u>Binder Additives</u>	Only enter additives added to binder at your production facility. If your binder is modified at the terminal, that would be entered under the "Binders" section. You may enter multiple binder additives; This sheet has just one in the interest of space.
	Source Name	What is the name of your supplier?

Recorded Amount	Materials & Sources	Comments & Help
	Contact Name	The name and contact information of a person at the supplier is required in the case of a data verification audit (rare). This contact data will remain confidential at all times, and they will not be contacted except in the case of a material data audit.
	Contact Email	
	Source Physical Address	This is used to verify the physical distance travelled by the binder additive to get to your production facility in the case of a data audit.
	Ingredient Name (Binder Additive)	This is the unique name of the binder additive. Again, this section is for binder modifiers or additives you add to binder at your production facility. If you purchase your binder with additives already present (they are added at the terminal), enter them in the Binder section (above, row 52)
	Ingredient Category	Select from a pulldown menu of typical modifier and additive types.
	Description	This is a non-required field where you may make notes about the binder additive.
	<u>Mix Additives</u>	You may enter multiple mix additives; This sheet has just one in the interest of space.
	Source Name	What is the name of your supplier?
	Contact Name	The name and contact information of a person at the supplier is required in the case of a data verification audit (rare). This contact data will remain confidential at all times, and they will not be contacted except in the case of a material data audit.
	Contact Email	
	Source Physical Address	This is used to verify the physical distance travelled by the mix additive to get to your production facility in the case of a data audit.
	Ingredient Name (Mix Additive)	This is the unique name of the mix additive.
	Ingredient Category	Select from a pulldown menu of typical mix additives.
	Description	This is a non-required field where you may make notes about the particulars of the mix additive.

#### Step 4: Defining a Mix (lines 90-208 in EPD Data Gathering)

Once all of the suppliers and materials needed for a given asphalt mix are created, the final step is to define the mix.

First, you must select whether you want the EPD for this mix to be available on the Published EPDs page (recommended). Use the check box on the top right of the page to allow your EPD to appear on the page targeted at potential buyers, who can search by state for manufacturers who have asphalt mixes with EPDs.

It is very important to note that the Emerald Eco-Label tool assumes that you track your aggregates, mix additives, and binder additives added at your production facility as a percentage of the total mass of the mix. If instead you track your aggregate as a percentage of the mass of aggregates only, and/or binder additives as a percentage of the mass of binders only, you have two options:

1. You can use the EPD Data Gathering sheet **MIX FORM B** (lines 149 to 208) to automatically convert your mass percentages by entering your data in the yellow boxes, then using the converted percentages in the red boxes in the Emerald Eco-Label Tool, or
2. Use the following equations:
  - a.  $\text{Aggregate (percentage of total mass)} = \text{Aggregate (percentage of aggregate mass)} / 100 * \text{Percentage of total mass that is aggregates}$
  - b.  $\text{Binder Additive (percentage of total mass)} = \text{Binder Additive (percentage of binder mass)} / 100 * \text{Percentage of total mass that is binder}$

So if your mix is 8% binder and 92% aggregate, and a binder additive is 2% of the binder, and a coarse aggregate is 80% of the aggregate mass, the coarse aggregate value entered into the tool is  $80\% / 100 * 92\% = 73.6\%$ , and the binder additive value entered into the tool is  $2\% / 100 * 8\% = 0.16\%$ .

Once you have all of your percentages in terms of total mass, you can specify your mix. Select a mix ID that is meaningful—This will appear on the final EPD output. Then enter the materials & percentages, and the one-way mileage they travel to your site (Figures 10 & 11). At any time you can press “Submit” to save an incomplete mix, and return to the Mixes & EPDs page to complete the incomplete mix. Exiting without pressing submit will result in your data being lost.

Refer to the Table 4 or the EPD Data Gathering sheet for guidance on individual entries.

### Mix Overview

Identify the primary characteristics of this mix. Note that all mass percentages are in terms of total mix mass.

Mix ID\*

Enter a meaningful unique identifier for this mix. We suggest you use your company's naming convention and/or identifier.

Primary Contact\*  **Select from the pulldown menu. Does not need to be the Tech. Lead**

Identify a primary contact person for this mix. This person's contact information will be included on all EPDs generated for this mix design.

Min Production Temperature\*  Max Production Temperature\*  Temperature Units\*

Minimum temperature of mix production. Maximum temperature of mix production. Ensure correct units are selected.

Percent RAP by Mass  % **What % of your RAP is binder?** RAP Binder Percentage  %

Recycled Asphalt Pavement used, as percent of total mix mass. Value should be between 0 and 100. Mass percent of RAP due to binder content. Value should be between 0 and 100.

Percent RAS by Mass  %

Recycled Asphalt Shingles used, as percent of total mix mass. Value should be between 0 and 100.

Percent Baghouse Fines by Mass  % **No travel distances are needed for RAP, RAS, and baghouse fines**

Baghouse fines used, as percent of total mix mass. Value should be between 0 and 100.

Figure 10: Defining a Mix

### Aggregate

Identify all aggregates used in this mix.

Ingredient\*  **Select materials defined in Step 3 from pulldown** Percent of Mix by Mass\*  %

[coarse] Coarse agg test from Test Quarry 1 66 %

Truck Transport Distance  Miles Train Transport Distance  Miles Barge Transport Distance  Miles

One-way distance. Default is 50 miles. One-way distance. One-way distance.

Document  Data Requirements.docx

Please attach a file that documents the use of this ingredient in this mix, if available.

Ingredient\*  Percent of Mix by Mass\*  %

[fine] Fine Agg test from Test Quarry 1 15 %

Truck Transport Distance  Miles Train Transport Distance  Miles Barge Transport Distance  Miles

One-way distance. Default is 50 miles. One-way distance. One-way distance.

Document  No file chosen

Please attach a file that documents the use of this ingredient in this mix, if available.

**All percentages are by total mix mass**

**A material may travel by any combination of truck, train, & barge**

**Click to add more materials**

Figure 11: Mix Definition, Continued



Table 4: Mix Definition

Recorded Amount	<u>MIX FORM A</u>	Units	Use <b>MIX FORM A</b> ONLY if you calculate aggregate content as a percent of total mix weight. If you calculate agg content as a percent of total agg weight, use <b>MIX FORM B</b> to convert your percentages to a "per ton mix" basis.
	Mix ID		Enter the unique name of the mix.
	Primary Contact		Select who will be the primary contact for the EPD for this mix from a pull-down list of people at your Organization.
	Minimum Temperature	Fahrenheit or Celsius	What is the lowest temperature the mix is created at?
	Maximum Temperature	Fahrenheit or Celsius	What is the highest temperature the mix is created at?
	RAP Percent by Mass	percent	What percent of the mix (by mass) is RAP? Mileage for RAP is automatically set by the Product Category Rules (PCR) to be 50 miles for all applications.
	RAP Binder Percentage	percent	What percent of the RAP is binder (by mass)?
	RAS Percent by Mass		What percent of the mix (by mass) is RAS? Mileage for RAS is automatically set by the Product Category Rules (PCR) to be 50 miles for all applications.
	Percent Baghouse Fines by Mass	percent	What percent of the total mix mass do baghouse fines comprise. Mileage for baghouse fines is automatically 0 miles for all applications.
	<u>Aggregates</u>		
	Aggregate 1 _____		In the EPD Tool, you will select from a drop down mix of the sources you have created in the "Material Sources" section above. For now, enter the names in the underlined sections for your reference.
	Amount per ton mix	percent	Enter the percent of Aggregate 1 in each ton of mix
	Truck transport distance	miles	Enter the distance traveled by Aggregate 1 by truck to get to your production facility. A material may be moved by one or several types of transport.
	Train transport distance	miles	Enter the distance traveled by Aggregate 1 by rail to get to your production facility.
	Barge transport distance	miles	Enter the distance traveled by Aggregate 1 by barge to get to your production facility.
	Aggregate 2 _____		See Aggregate 1 for guidance.
	Amount per ton mix	percent	
	Truck transport distance	miles	

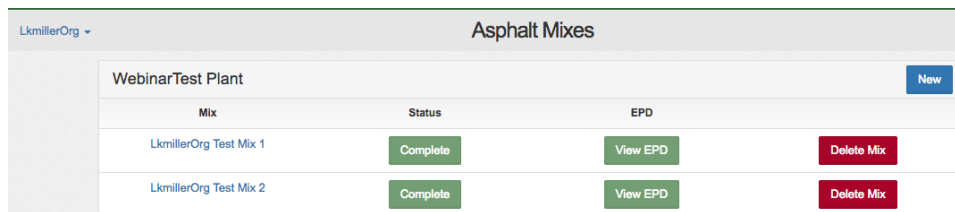
Recorded Amount	<u>MIX FORM A</u>	Units	Use <b>MIX FORM A</b> ONLY if you calculate aggregate content as a percent of total mix weight. If you calculate agg content as a percent of total agg weight, use <b>MIX FORM B</b> to convert your percentages to a "per ton mix" basis.
	Train transport distance	miles	
	Barge transport distance	miles	
	Aggregate 3 _____		
	Amount per ton mix	percent	
	Truck transport distance	miles	
	Train transport distance	miles	
	Barge transport distance	miles	
	<b>Binders</b>		
	Binder 1 _____		In the EPD Tool, you will select from a drop down mix of the sources you have created in the "Material Sources" section.
	Percentage of Mix by Total Mass	percent	Enter the percent per ton of mix (not binder!) that this binder comprises. Typical values are 4-8% if using one binder, and 0.5-8% if using more than one
	Train transport distance	miles	Enter the distance traveled by Binder 1 by rail to get to your production facility.
	Barge transport distance	miles	Enter the distance traveled by Binder 1 by barge to get to your production facility.
	Binder 2 _____		See Binder 1
	Percentage in Total Binder	percent	
	Truck transport distance	miles	
	Train transport distance	miles	
	<b>Binder Additives</b>		All items in this section should be entered as a percentage of total mix weight.
	Binder Additive 1 _____		If your binder is modified at the terminal, that should be entered during the "Material Sources" step (See row 52). If you are adding the additives at your plant, select them here. In the EPD Tool, you will select from a drop down mix of the sources you have created in the "Material Sources" section above.

Recorded Amount	<u>MIX FORM A</u>	Units	Use <b>MIX FORM A</b> ONLY if you calculate aggregate content as a percent of total mix weight. If you calculate agg content as a percent of total agg weight, use <b>MIX FORM B</b> to convert your percentages to a "per ton mix" basis.
	Percentage of Mix by Mass	percent	Enter the percent per ton of mix (not binder!) that this binder additive comprises. Typical values are 0.05-1.0%. To convert from % of binder to % of total mix mass, multiply the percentage of the additive in the binder by the decimal percentage of the binder in the mix. So, if your additive is 2% of the total binder mass, and your mix is 5% binder, your additive is $2.0\% \times 0.05 = 0.10\%$ of total mix mass.
	Train transport distance	miles	Enter the distance traveled by Binder Additive 1 by rail to get to your production facility.
	Barge transport distance	miles	Enter the distance traveled by Binder Additive 1 by barge to get to your production facility.
	Binder Additive 2 _____		See Binder Additive 1
	Percentage in Total Binder	percent	
	Truck transport distance	miles	
	Train transport distance	miles	
	Barge transport distance	miles	
	<u>Mix Additives</u>		All items in this section should be entered as a percentage of total mix weight.
	Mix Additive 1 _____		In the EPD Tool, you will select from a drop down mix of the sources you have created in the "Material Sources" section above.
	Amount per ton mix	percent	Enter the percent of Mix Additive 1 in each ton of mix
	Truck transport distance	miles	Enter the distance traveled by Mix Additive 1 by truck to get to your production facility. A material may be moved by one or several types of transport.
	Train transport distance	miles	Enter the distance traveled by Mix Additive 1 by rail to get to your production facility.
	Barge transport distance	miles	Enter the distance traveled by Mix Additive 1 by barge to get to your production facility.
	Mix Additive 2 _____		See Mix Additive 1
	Amount per ton mix	percent	
	Truck transport distance	miles	
	Train transport distance	miles	
	Barge transport distance	miles	

### Creating an EPD

Once you have completed a mix, you can view the EPD from the Mixes and EPDs page. Congratulations, you have made an EPD!

If you wish to have your mix EPD appear on the Published EPDs page (recommended), you can click on the mix name, and on the mix definition page, click on the “Publish EPD” toggle if you did not when you first created the mix. This will allow your EPD to appear on the Published EPDs page that is targeted at potential buyers, who can search by state for manufacturers who have asphalt mixes with EPDs.



Mix	Status	EPD	
LkmlerOrg Test Mix 1	Complete	View EPD	Delete Mix
LkmlerOrg Test Mix 2	Complete	View EPD	Delete Mix

Figure 12: Viewing your EPDs