# Mix Tracker Overview

## General

The Concrete Mix Design Tracker is a tool intended for the development and tracking of concrete mix designs through various stages of the approval process. The application has four tabs, each representing a different phase of the design process.

The first tab is the materials tab in which materials may be input and their properties recorded. These properties are used in various calculations in the subsequent prototype phase. From the materials tab materials may be added to prototypes or new prototypes created with the materials. The second tab is the prototypes tab in which prototypes created from the materials in the previous tab can be properly proportioned. Once the mix design proportions are defined, the prototype can be selected for testing in a trial batch. The third tab is the trial batch tab for recording this test data. Once the trial batch is approved, it can be promoted to an approved concrete mix design. The last tab is the mix designs tab which holds all these approved mix designs. From this tab, the mix may be printed.

## User Process

The user should begin by entering all materials used on the project on the materials tab. As the need to develop new prototypes arises the user can enter the chosen materials for each prototype from the materials tab. The user may then go to the prototypes tab and determine the appropriate weights or volumes for each material. Once the user has finished proportioning the prototype, they may then test the prototype and enter the information on the trial batch tab. The trial batch then goes through whatever approval process is relevant then can be added to the list of mix designs. The user can then print the mix design information to give to the concrete plant operator.

## Navigation

Graphical user interface, application

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### A – Tabs

Tabs may be selected to jump to any point in the process. See individual tab descriptions for more information.

### B – Filter

Reduces the number of navigation items in the selection list box (C) to a specific set of items.

A picture containing text

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When in the materials tab, the materials list can be filtered by material type as shown above left. All other tabs filter the list by concrete class as shown above right.

### C – Selection List Box

This is a list of all items stored in the application. Selecting an item from this list displays information relevant to that item in the main panel (D) and the properties panels (E and F).

### D – Main Panel

The main panel displays the main information and controls for the user at each stage of the process. See the individual tab descriptions for more information.

### E – Properties Panel

This panel displays information that the user can edit to change the properties of selected item in that tab.

### F- Information Panel

This panel displays read-only information for the user.

# Materials Tab

Graphical user interface, application

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The materials tab displays information about the materials used to develop concrete mixes. By default all information is read only.

## Editing Material Properties

With the material selected in the list box to the left the user may edit a material by pressing the “Edit” button. This will enable the Vendor Name, Material Source, Material Grade, Relative Density, and Properties controls to be changed. Note that the Material Type cannot be changed once created. To change the Material Type the user must create a new material. When fields can be edited the main panel will look like this:

Graphical user interface

Description automatically generated

Once all of the necessary edits have been made, press the “Save” button.

## Adding a Material to a Prototype

To add a material to a prototype, select the material and press the “Add to Prototype” button. The main panel will display the prototype selection control as shown below:

Graphical user interface, application

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To add the material to an existing prototype simply double-click the desired prototype. Double-clicking the “Create New Prototype” item will create a new prototype with the selected material.

## Adding a New Material

To add a new material to the list, click the “Add Material” button in the main panel. The user will be prompted to select a material type from the drop-down menu as shown below:

Graphical user interface, application

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To confirm the material type selection and edit the other material properties, click the “Accept” button. This will create an empty material record as shown below:

Graphical user interface

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The user then inputs the information and clicks “Save”.

Graphical user interface, application

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The new material will then appear in the selection list.

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# Prototypes Tab

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The prototypes tab displays information about concrete mix proportions. These fields can be edited but by default they are read only.

## Editing Prototype Proportions

The user may edit mix proportions by clicking the “Edit” button. This will activate enable the fields for each materials proportions by weight, volume, or dosage. As the user updates any field, the related field is updated automatically. The properties window is also available for editing by the user.

Graphical user interface, application

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Once the user makes the necessary edits click “Save” to capture the changes and return to read-only mode.

## Making a Copy of an Existing Prototype

Pressing the “Copy” button will duplicate the selected prototype and assign it a new number. This can allow the user to make minor adjustments to existing prototypes.

## Selecting a Prototype to Trial

Clicking the “Trial Batch” button will create a new trial batch with the selected prototype and assign it a trial batch number.

# Trial Batch Tab

Graphical user interface, application

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The trial batch tab allows the user to enter test data and notes from a tested prototype. Test data is entered in the properties panel

## Editing Trial Batch Data

To edit trial batch data click the “Edit” button. The panels will change to appear like this:

Graphical user interface, application

Description automatically generated

The “Notes” text box will now allow the user to enter information regarding the trial batch. The properties window is now available to enter test data. When the user has finished making the necessary edits, click the “Save” button to store the data.

## Approved Mix Designs

Once a mix design has been submitted and approved in accordance with project requirements, the user may then click the “Approve” button. This will create an entry into the mix design tab and assign it a mix design number.

# Mix Designs Tab

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The mix design tab displays general information regarding an approved mix design and allows printing of the mix design to the default printer. The mix design summary is read only.

## Printing the Mix Data

To print the mix data as it appears in the summary, simply click the “Print” button. The mix design will print to the default printer.