

CRMCA Member Industry-Wide EPD for Canadian Ready-Mixed Concrete LEED v4 MR Credits

Option 1 – EPDs (Disclosure) (1 point)

Option 1 of the LEED v4 MR Credit EPDs, valued at 1 point, consists of 20 permanently installed products and can be broken down into 3 categories:

1. Product specific declaration – publicly available **(1/4 product)**
2. Industry average EPD – third party certified Type III **(1/2 product)**
3. Product specific EPD – third party certified Type III **(Full product)**

The CRMCA Member Industry-Wide EPD report pertaining to item #2 above, is widely available to all Concrete Ontario members and it contains 125 mix designs chosen by the CRMCA to represent the most common types of concrete utilized across the provinces. A summary of these mix designs can be found in Table 1: Declared Product Range Classification. For each of these mixes, impact assessment testing was also completed and the summary can be found in Table 6.

LEED Consultants will require members to supply documentation regarding LEED v4, and the following information is needed to complete an EPD declaration letter, which outlines the LEED EPD associated mix designs that were used on the project:

1. Your Approved Mix Designs
2. CRMCA Member Industry-Wide EPD for Canadian Ready-Mixed Concrete report or Concrete Ontario summary spreadsheet (attached)
3. Sample Letter (attached)

To identify equivalent LEED EPD mix designs, the CRMCA Industry-Wide EPD report includes the procedure below:

HOW TO USE TABLE 1

Most proposed ready mixed concrete products for a project will likely not match up exactly with the specified compressive strength and mix design proportions listed in this EPD. One can use Table 1 to classify a proposed product to match one of the products listed in the EPD as follows:

Step 1: Identify the 28-day specified compressive strength of the proposed product, the percentage of fly ash and/or slag cement (e.g., 100 x fly ash quantity / total cementitious materials quantity) and whether it is or isn't an air entrained product.

Step 2: In Table 1 identify the specified compressive strength range that captures the proposed products compressive strength (Column 2 – header label) and whether it is or isn't air entrained (see last column "Air Ent (Y/N)").

Step 3: Then identify the SCM percentage that matches the proposed products SCM percentage by type (fly ash-FA% or slag cement-SL%) within that specified compressive strength range and whether it is or isn't air entrained. For mixes containing silica fume, match the proposed product to the appropriate slag cement percentage. For ternary mixes (mixtures containing GU or GUL cements, fly ash and slag cement or silica fume) between 15% and 35% SCM (fly ash plus slag cement) take the largest percentage of either fly ash or slag cement and use that value to select the SCM range to use. For example, if the proposed ternary mix design has 15% fly ash and 25% slag cement, use the 25% slag mix.

Step 4: In that row, move to column 1 (Mix #) to identify the product that can be used to look up the life cycle impacts listed in Table 6 per m³ of product. Reference this EPD and the appropriate Mix # in any compliance statement / literature.

Illustrative Example 1: For a proposed 24 MPa air entrained mix design employing GU cement and incorporating 22% fly ash, the appropriate Mix number to select for compliance purposes is Mix #4.

Illustrative Example 2: For a proposed 24 MPa non-air entrained mix design employing GUL cement and incorporating 30% slag cement, the appropriate Mix number to select for compliance purposes is Mix #15.

All mix designs highlighted in blue for any compressive strength class range is solely provided for purposes of industry benchmarking. Note: All LCIA results are calculated at the upper bound of each strength class range and the indicated SCM level to be conservative.

Once all mixes from the mix design have been associated with mixes from Table 1, a summary letter is provided to the LEED Consultant as indicated in the "Sample Letter".

If you have any questions, please contact [Alen Keri](mailto:Alen.Keri@cmo.on.ca) 905-507-0617.

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Ready Mixed Concrete Association of Ontario

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