MEP EPD Data Update 2026

New Categories, Subcategories, and EPD Coverage for Mechanical, Electrical, and Plumbing Systems

Executive Summary

This report documents Building Transparency's MEP EPD data coverage in EC3 as of November 2026, following a sustained investment in MEP category development that began in 2024–2025 with support in part from the McKinstry Foundation. That work addressed a persistent gap in the construction industry's ability to search and compare the environmental impact of mechanical, electrical, and plumbing systems — and the population has continued to grow substantially since.

MEP coverage in EC3 has grown by roughly three-quarters over the past year, from about 6,500 to more than 11,300 categorized, searchable EPD records mapped to specific mechanical, electrical, and plumbing subcategories. Key accomplishments include new MEP categories and subcategories, refined product attributes and performance-based search fields, a system to split multi-product EPDs using extrapolation tables into individual searchable records, and ongoing cleanup and recategorization of EPD records across MEP categories.

Scope	Description
MEP Category Development	New categories and subcategories for Mechanical, Electrical, and Plumbing disciplines with refined attributes and search fields.
EPD Splitting System	System to read EPD extrapolation tables and generate individual searchable records per product variant.
EPD Cleanup and Recategorization	Comprehensive search, recategorization, and parsing of existing MEP EPDs across the EC3 database.

Work Accomplished

1. MEP Category Development

Building Transparency worked closely with McKinstry engineers to develop and refine MEP category specification sheets for EC3. This included updating category names, descriptions, classifications, and keywords to align with how MEP professionals identify and search for equipment. New categories and subcategories were implemented to facilitate an improved search experience and better comparability within MEP product groups.

Product attributes and performance-based search fields were implemented for MEP categories across three disciplines:

Discipline	Example of Categories with Attributes Implemented
Mechanical	Air Terminal Units, Chillers, Heat Pumps, VRF Systems, Ducts
Electrical	Conduit, Power Cabling, Data Cabling, Photovoltaics, Batteries
Plumbing	Piping, Fire Suppression Piping, Building Heating Piping

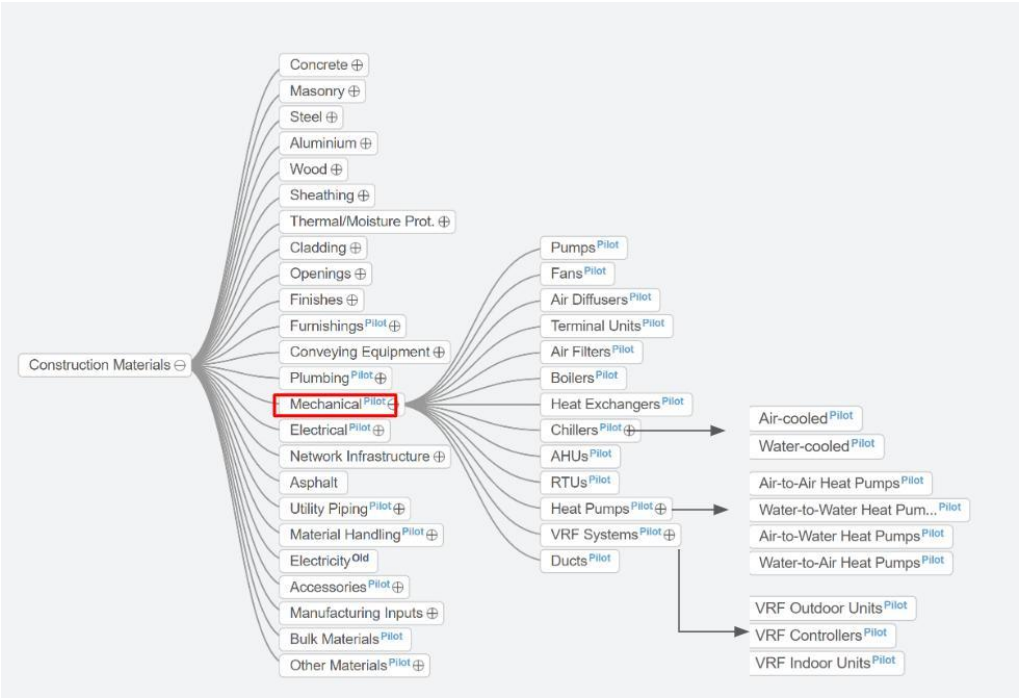

Figure 1. Example of new Mechanical subcategories in EC3.

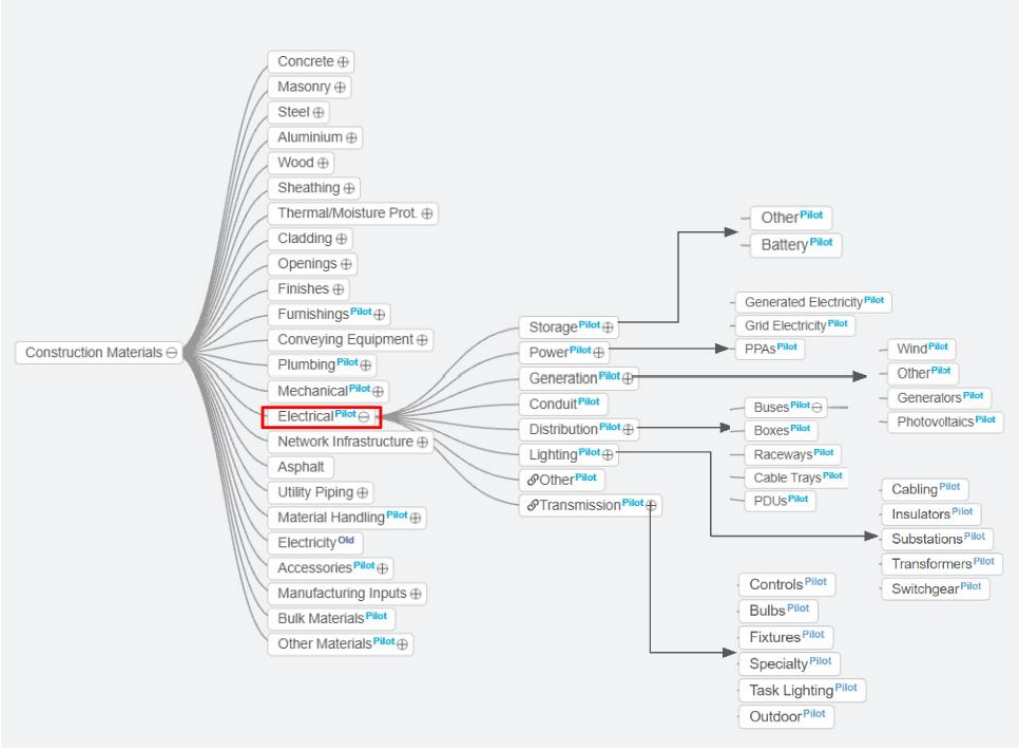

Figure 2. Example of new Electrical subcategories in EC3.

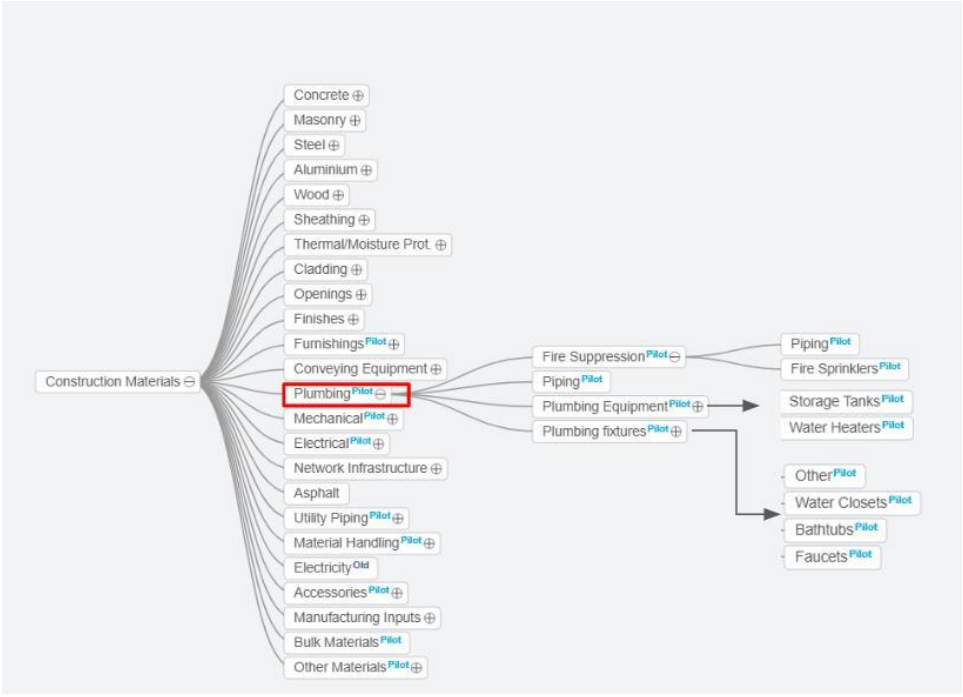

Figure 3. Example of new Plumbing subcategories in EC3.

These attributes enable users to filter and compare products by performance characteristics relevant to each equipment type, such as cooling capacity, refrigerant type, voltage, nominal diameter, and material composition.

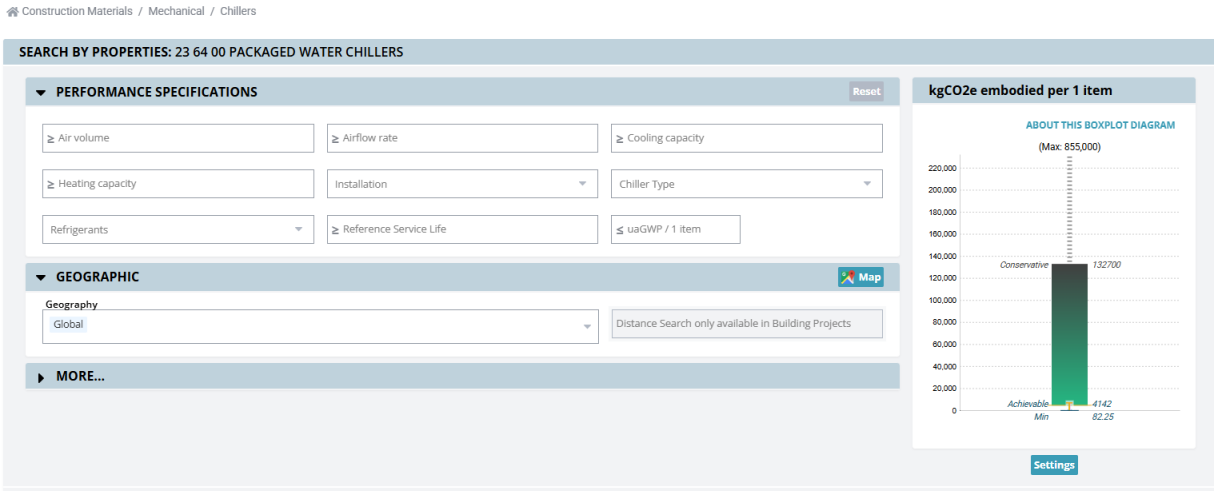

Figure 4. Example of the Mechanical category specification.

2. Multi-Product EPD Splitting System

Many MEP EPDs report a single reference product alongside an extrapolation table — scaling factors that cover a full range of product sizes, capacities, or configurations. Before this work, EC3 would ingest such an EPD as a single record, making all non-reference product variants invisible to users.

Building Transparency developed a system to read those extrapolation tables and generate individual searchable records for each variant. The system applies the scaling factors reported in the EPD to the reference product GWP value, producing separate records per product in the table. A significant portion of the chiller EPD count, for example, reflects variants generated through this splitting process rather

than separate manufacturer submissions. The system operates across mechanical, electrical, and plumbing categories wherever EPDs include extrapolation tables.

3. EPD Data Cleanup and Recategorization

Building Transparency conducted a comprehensive search of the EC3 database for existing MEP EPDs that were previously miscategorized or undigitized due to the absence of appropriate category structures. EPDs with extrapolation tables were split into individual result records as described above.

Current MEP EPD Coverage

Counts below were pulled from public EC3 on 5 November 2026 and reflect EPDs mapped to a specific product subcategory. Each discipline total is the exact sum of the subcategory rows shown. A number of EPDs that currently sit only at a general parent level — for example, lighting products not yet assigned to a specific lighting subcategory — are excluded until they are categorized (2,623 records across the three disciplines, chiefly in Electrical).

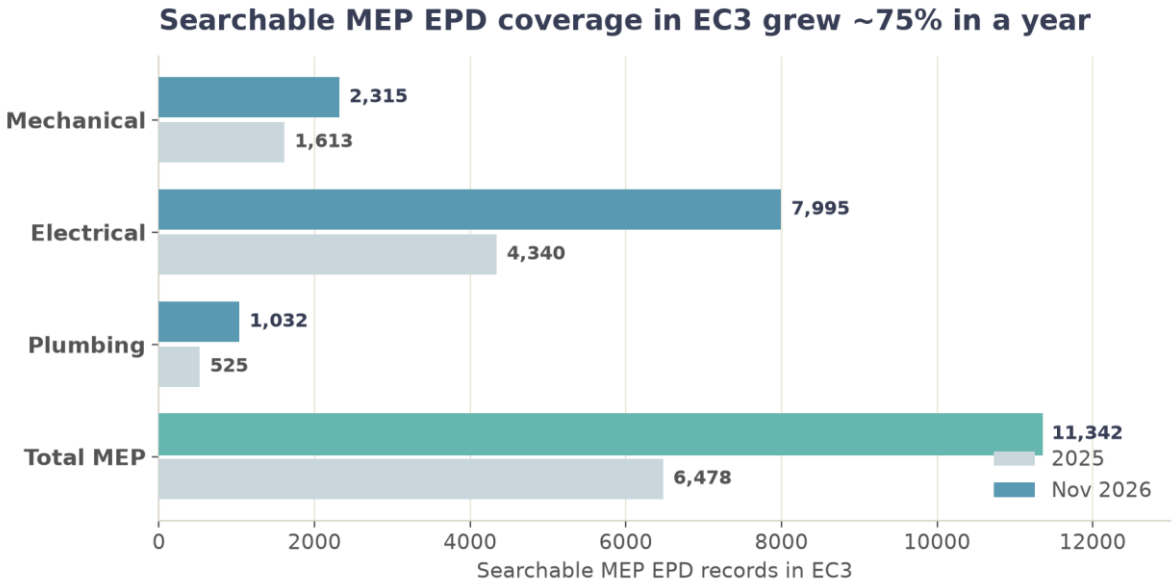

Figure 5. MEP EPD coverage in EC3 by discipline, 2025 versus November 2026.

Mechanical

The mechanical category tree covers 13 subcategories. Chillers remain the most populated subcategory, driven substantially by the EPD splitting system, with Air Handling Units the next largest.

Category / Subcategory	Product EPDs	Industry EPDs	Total EPDs
Chillers	916	2	918
AHUs	543	0	543
Heat Pumps	255	8	263
Fans	106	0	106
Air Diffusers	92	2	94
Boilers	89	0	89
Ducts	87	2	89
HVAC Heat Exchangers	79	1	80
Pumps	34	16	50
Air Terminal Units	33	1	34

Rooftop Units	27	0	27
VRF Systems	12	2	14
Air Filters	8	0	8
Mechanical total	**2,281**	**34**	**2,315**

Electrical

With 7,995 total EPDs, electrical is by far the largest MEP discipline in EC3. The dominant subcategory is Other Electrical Equipment at 3,633 EPDs — a broad catch-all capturing European electrical product EPDs that do not fit neatly into a more specific subcategory — followed by a rapidly growing lighting population led by Lighting Fixtures at 2,179 EPDs.

Category / Subcategory	Product EPDs	Industry EPDs	Total EPDs
Other Electrical Equipment	3,631	2	3,633
Lighting Fixtures	2,109	70	2,179
Conduit	911	0	911
Outdoor Lighting	267	5	272
Lightbulbs	241	0	241
Lighting Controls	147	18	165
Batteries	156	0	156
Photovoltaics	105	1	106
Busbars & Busways	87	0	87
Cable Trays	86	0	86
Wind Turbines	51	0	51
Specialty Lighting	28	0	28
Floor Equipment Boxes	27	0	27
Power Distribution Units (PDUs)	20	0	20
Other Generation	13	0	13
Electricity (specific generator)	9	0	9
Other (power storage)	8	0	8
Fueled Generators	2	0	2
Raceways	1	0	1
Electrical total	**7,899**	**96**	**7,995**

Plumbing

The plumbing category tree covers Fire Suppression, Piping, Plumbing Equipment, and Plumbing Fixtures. Piping is the largest and most mature plumbing subcategory at 360 total EPDs, with the plumbing fixtures close behind.

Category / Subcategory	Product EPDs	Industry EPDs	Total EPDs
Piping	342	18	360
Other Plumbing Fixtures	222	4	226
Pipe Fittings	163	0	163
Water Closets	122	10	132
Faucets	66	3	69
Water Heaters	28	0	28
Bathtubs	24	4	28

Storage Tanks	11	0	11
Fire Sprinklers	9	0	9
Fire Protection Piping	6	0	6
Plumbing total	**993**	**39**	**1,032**

Data Challenges

The following challenges persist in making MEP EPD data fully searchable and comparable inside EC3. These challenges originate upstream in EPD reporting conventions and PCR requirements and cannot be resolved through parsing improvements alone.

Incomplete Reference Product Specifications

An EPD may declare a reference product but omit key specifications such as nominal diameter, material composition, or voltage. The record is ingested into EC3 but cannot be filtered by the attributes needed for procurement decisions. The data team searches for technical data sheets on manufacturer websites to fill in missing attributes. This is successful only when current, matching documentation is publicly available.

Incomplete Specifications in Extrapolation Tables

When the EPD splitting system generates individual records from an extrapolation table, the performance specifications for non-reference variants are often absent from the EPD itself. The resulting records carry GWP values but lack the searchable attributes that make comparison meaningful. External data sheets are sourced per variant where possible. Coverage remains incomplete for manufacturers who do not publish detailed variant-level product specifications.

Declared Unit Mismatch

The declared unit reported in an EPD may not align with the expected declared unit for the EC3 category. A chiller EPD reported per unit of equipment, for example, cannot be directly compared to another reported per kilowatt of rated cooling capacity. Normalization requires a conversion factor that the EPD often does not provide. Where conversion data is available, the record is normalized. Where it is not, the record is excluded from category-level comparisons even when GWP data exists.

EC3 2.0: What Is Coming for MEP

EC3 2.0 reached a major milestone in 2026: the modernized Find & Compare material search experience launched in public beta at the Greenbuild International Conference & Expo, giving the community its first hands-on look at the next generation of the platform. MEP categories participate in EC3 2.0 as a pilot today and will become fully public as the platform matures. Learn more about EC3 2.0 at buildingtransparency.org/ec3-2-0-modernizing-open-infrastructure-for-embodied-carbon.

EC3 2.0 represents a major platform evolution, currently in active development. The following improvements are directly relevant to MEP data coverage and usability.

Feature	Description
AI-powered re-parsing	Existing EPDs in MEP categories re-parsed using upgraded AI digitization to backfill attributes defined after initial ingestion — refrigerant type, capacity, voltage, material composition.
Pilot category restructuring	MEP categories currently in Pilot status opened to all users. EPDs accessible regardless of category maturity, with incomplete attributes clearly flagged rather than silently absent.
Upgraded ingestion pipeline	Scalable ingestion workflows with enhanced QA and error reporting. Reduced time from EPD upload to availability and improved data quality confidence.
Expanded attribute tracking	Deeper performance attribute coverage for mechanical systems including VRF, heat pumps, and chillers, and for electrical and ICT equipment categories.
openEPD interoperability	openEPD becomes the primary data exchange format for MEP manufacturers and program operators, enabling structured, machine-readable EPDs that flow directly into EC3 without custom parsing.
Enhanced search and API	Improved search filters, faster response times, and a consolidated API. MEP categories become first-class citizens in the Find & Compare interface.

Impact and Outcomes

The work completed through this period has meaningfully advanced the construction industry's ability to account for embodied carbon in MEP systems.

Outcome	Description
Category foundation	EC3 now has a structured category and attribute framework for MEP products across detailed sub-categories, enabling search, comparison, and evaluation alongside structural materials.
EPD coverage	More than 11,300 MEP EPD records mapped to specific subcategories and searchable, across mechanical (2,315), electrical (7,995), and plumbing (1,032) — up roughly three-quarters from a year ago.
Splitting system	A scalable multi-product EPD splitting system maximizes usable data extracted from each EPD document, reducing the need for manufacturers to submit individual EPDs per product variant.
Manufacturer engagement	The data collection and attribute development process initiated engagement with MEP equipment manufacturers on EPD disclosure and the business case for product-specific data.
Scalable process	The category development and cleanup methodology can be replicated for additional MEP product categories.