AIRFLOW®

CIBSE TM65 Embodied Carbon 'Mid-level' Calculation

Assesment Date: Organisation:	10.11.2023 Airflow Developments Ltd	Embodied Carbon Result with 'TM65 Calculation' Method Total:
Contact email:	info@airflow.com	**769 kg CO₂e**

DUPLEXbase PS 650 - Product Information

Type of product	Mechanical Ventilation with Heat Recovery (MVHR)	
Maximum power input (kW)	0.34	
Product weight (kg)	115	
Material breakdown for at least 95% of the product weight? (Y/N)	Y	
Service life of the product (years)	15	
Energy consumption of the factory per kg of product (kWh)	0.58	
Location of manufacture	Europe	
Product Complexity	Category 3: High	

TM65 Calculation Methodology

TM65 calculation methodology outlines the need for product embodied carbon assessment related to building services engineering systems. Embodied carbon is understood as the greenhouse gas emissions associated with the manufacture of a product, its installation, maintenance, repair, replacement, and end of life. It covers the whole life cycle, excluding operational aspects and the potential recovery, reuse or recycling of materials. [Ref. CIBSE TM65 Embodied carbon in building services: A calculation methodology (2021)]

'Mid-level' calculation

Step 1: A1 Material extraction + A2 Transport to factory + A3 Manufacturing + A4 Transport to site

Step 2: + C2 Transport to waste facility + C3 Waste processing + C4 Waste disposal

Step 3: + B3 Repair

× 1.3 Buffer factor + B1 C1 Refrigerant leakage *

*Not applicable for our products.
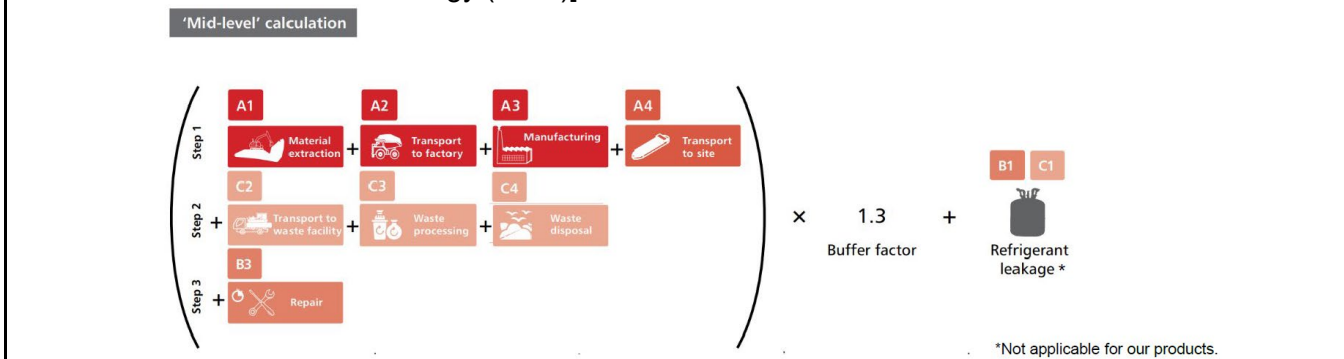
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Embodied Carbon Results Breakdown (kg CO₂e)

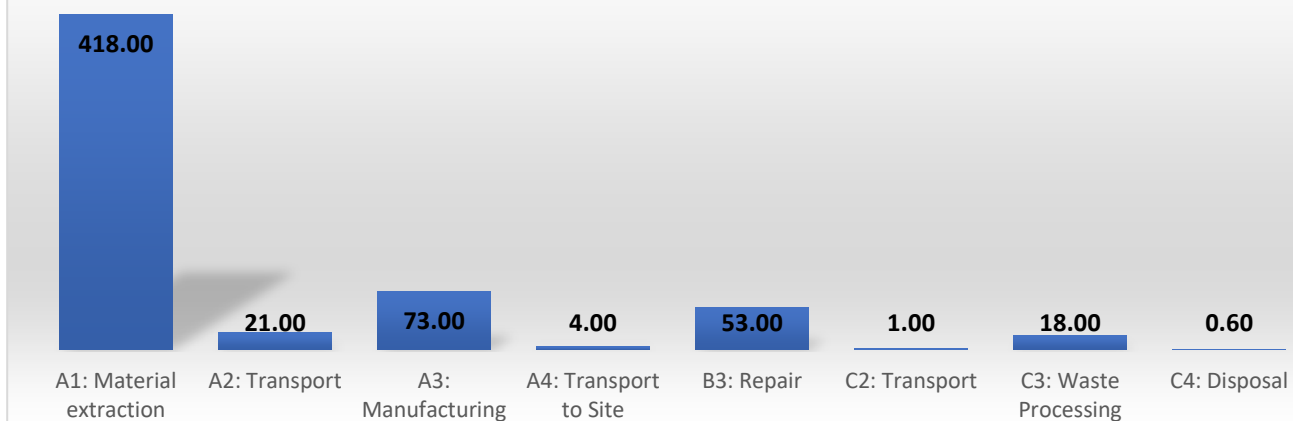|	
A1: Material extraction	418.00
A2: Transport	21.00
A3: Manufacturing	73.00
A4: Transport to Site	4.00
B3: Repair	53.00
C2: Transport	1.00
C3: Waste Processing	18.00
C4: Disposal	0.60

Total embodied carbon results (kg CO₂e) Mid-Level:	769

Embodied Carbon Results Breakdown (kg CO2e)

A1: Material extraction	A2: Transport	A3: Manufacturing	A4: Transport to Site	B3: Repair	C2: Transport	C3: Waste Processing	C4: Disposal
418.00	21.00	73.00	4.00	53.00	1.00	18.00	0.60

Assumptions

A1: Material carbon coefficient source	TM65 Table 2.1
A2, A4 and C2	TM65 Table 4.7 & Table 4.8
A2 and A3 Product complexity	TM65 Table 4.9
A3: Manufacturing	TM65 Table 4.10 & Table 4.11
A4: Transport to site	TM65 Table 4.12
C3 and C4	TM65 Table 4.14 & Table 4.15
B3: Repair	10% (TM65 Assumption)

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