### Development of the Finnish Regulations for Low Carbon Buildings

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### Framework for the Low Carbon Building Regulations

Law



# Main Content of the Essential Requirements for Low Carbon Buildings



**Carbon Footprint**: **Global Warming Potential** Results within the System Boundary, i.e. Emissions and Removals = Net Loads.

**Carbon Handprint**: **Global Warming Potential** Results outside the System Boundary, which are resulting from the Building Life Cycle, i.e. Potential Avoided Emissions and Potential Removals = Net Benefits.

# Carbon Footprint of a Building and Building Site Works



### **Carbon Footprint of Building Life Cycle**

INFORMATION BEYOND **BUILDING LIFE CYCLE INFORMATION** THE CONSTRUCTION WORKS LIFE CYCLE A0 A1-3 A4-5 B1-8 C1-4 D PRE-PRODUCT CONSTRUCTION BENEFITS AND LOADS BEYOND CONSTRUCTION END OF LIFE STAGE USE STAGE STAGE PROCESS STAGE THE SYSTEM BOUNDARY STAGE **B**4 Construction **B**1 B 2 **B**3 **B5** D1 an Use, installed products Bu Net Flows from cvcli Reuse -Non-physical processes before construction, premilinary studies, acquisition of land/site and design **Development** Refurbishment Recycling existing Replacement Maintenance Energy Recovery -Other Recovery Proce Repair Construction - Site I Deconstruction of P Works, Installation F Supply Transport Manufacturing Deconstruction D2 **B6 Operational Energy Use** Waste Proc Energy Rec **Fransport** Transport Material \$ Disposal **Exported Utilities B**7 **Operational Water Use** (e.g. Electric Energy, Thermal Energy, Potable Water, Biogenic and Technical Carbon A1-A3 **A4** A5 **C1** C2 C3 **B**8 C4 A0 **Users' Activities** Storage, Carbonation)

C<sub>footprint</sub> = GWP<sub>manufacturing</sub> + GWP<sub>replacement</sub> + GWP<sub>waste processing</sub> + GWP<sub>disposal</sub> + GWP<sub>transport</sub> + GWP<sub>site</sub> + GWP<sub>operational energy</sub>

Circularity: e.g. avoided impacts from re-use of components and use of secondary materials are included in the results of the Carbon Footprint according to EN 15804<sup>6</sup>

### **Potential Carbon Handprint of Building Life Cycle**

handprint = GWP <sub>re-use/recycling</sub> +GWP <sub>secondary fuel</sub> +GWP <sub>energy recovery</sub> +GWP <sub>exported energy</sub> +GWP BUILDING LIFE CYCLE INFORMATION													rbon storage +GWP carbona INFORMATION BEYOND THE CONSTRUCTION WORKS LIFE CYCLE	ation
A0 PRE- CONSTRUCTION STAGE	A1-3 PRODUCT STAGE	A4-5 CONSTRUCTION PROCESS STAGE	B1-8 USE STAGE					C1-4 END OF LIFE STAGE					BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY	
cesses before emilinary studies, tests, nd/site and design		ite Development, of Pre-existing Construction on Processes	Use, installed products B	Maintenance	Repair	Replacement	Refurbishment 58			ig for Reuse, Recycling and			D1 Net Flows from Reuse - Recycling - Energy Recovery - Other Recovery	
hysical pr uction, pr ition of la	al Supply bort acturing	oort ruction - S struction , Installati	<b>B6</b>	Operational	Energy Use			struction	oort	Processir y Recover,	sal		D2	
Non-p constr acquis	Materi Trans; Manuf	Trans; Const Decon Works	В7 С	Operational Water Use				Decon	Trans	Waste Energ	Dispo	E	Exported Utilities (e.g. Electric Energy, Thermal Energy, Potable Water, <mark>Biogenic</mark>	i
A0	A1-A3	A4 A5	B 8 Users' Activities					C1	C2	C3	C4		and Technical Carbon Storage, Carbonation)	i

Circularity: e.g. net avoided impacts from re-use, recycling and exported utilities are included in the results of the Carbon Handprint according to EN 15978 & ISO 14067<sup>°</sup>

#### **Thank You!**





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