

May 2021

# European Technical Assessments

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# ETA-Danmark A/S



- Subsidiary company of Dansk Standard
- Notified by The Danish Transport, Construction and Housing Authorities to issue European Technical Assessments (ETA) according to the Construction Product Regulation (CPR) (EU) 305/2011, assessed by DANAK.
- Notified by of The Danish Environmental Protection Agency to issue Environmental technology Verification (ETV), assessed by DANAK

## ETA-Danmark A/S is a member of:



The European Organisation for Technical Assessment



The World Federation of Technical Assessment Organisations



The European Union of Agrément

# Construction Products Regulation

- Declare performance of specified characteristics of a construction product in order to CE mark
- The CE mark indicates that the performance has been determined in accordance with a harmonized European specification
- The CE Mark means that the product has been manufactured and controlled in accordance with a harmonized European specification
- CE mark shall not be confused with national approvals and the CE mark does not indicate if national requirements related to the use of the product are fulfilled
- The CE is not a quality mark



# CE marking – a license to sell

## Two ways to CE mark a construction product

### Harmonized standards

CE marking is mandatory

Harmonized standards developed by CEN

### European Technical Assessments

Issued by Technical Assessment Bodies (TAB's)

Based on European Assessment Documents (EAD's)

TAB's are organized in EOTA – the European Organization for Technical Assessment

EOTA is responsible for developing EAD's

EAD's are harmonized technical specifications – like harmonized standards

EAD's are cited in the Official Journal of EU



# Products not covered by a harmonized standard

- Innovative products .e.g.
  - The product itself is not mature for standardization
  - There is only one manufacturer
- Products undergoing a fast technological development
- Construction kits/systems





# CE - Marking with an ETA

- Tool of the European legislation to allow for CE marking of non standardized construction products
- Allows for CE marking of products not covered by a harmonized standard
- Voluntary scheme



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Authorised and notified according  
to Article 29 of the Regulation (EU)  
No 305/2011 of the European  
Parliament and of the Council of 9  
March 2011



## European Technical Assessment ETA-11/0478 of 2018/06/12

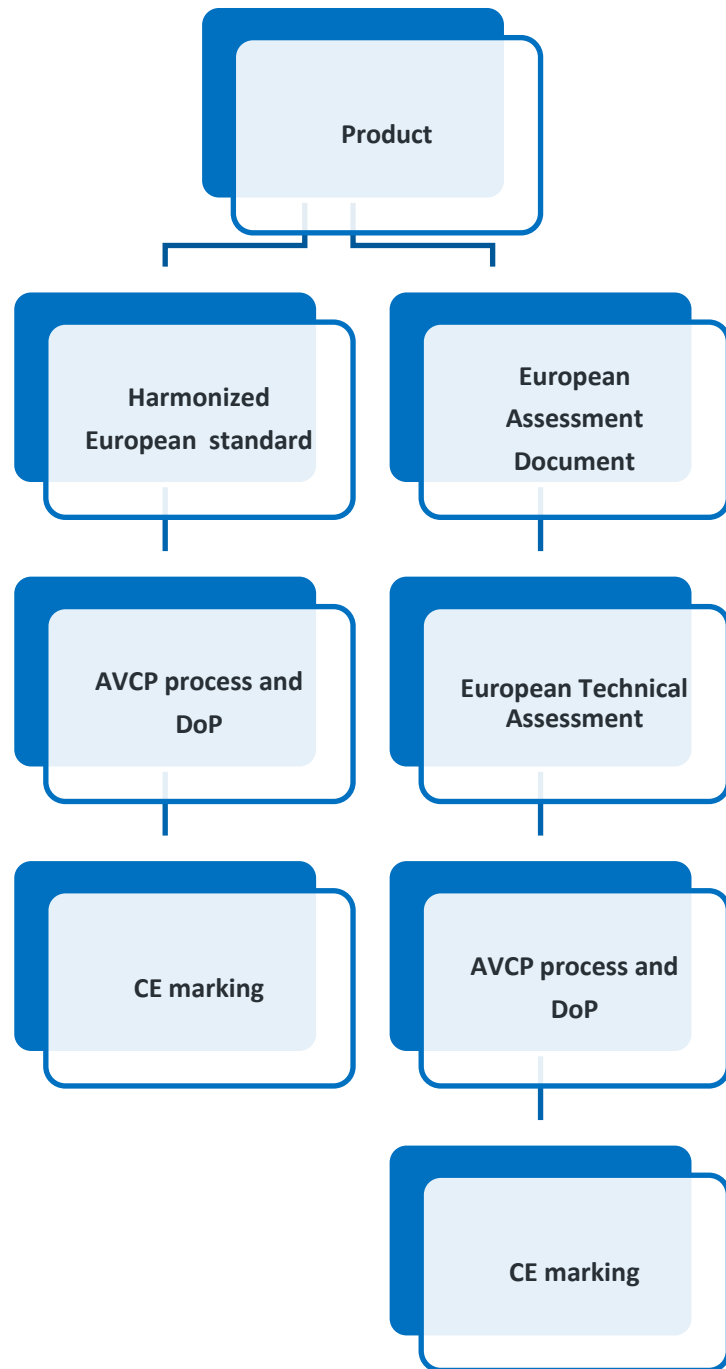
I General Part

Technical Assessment Body issuing the ETA and designated according to Article  
29 of the Regulation (EU) No 305/2011: ETA-Danmark A/S

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# EAD process

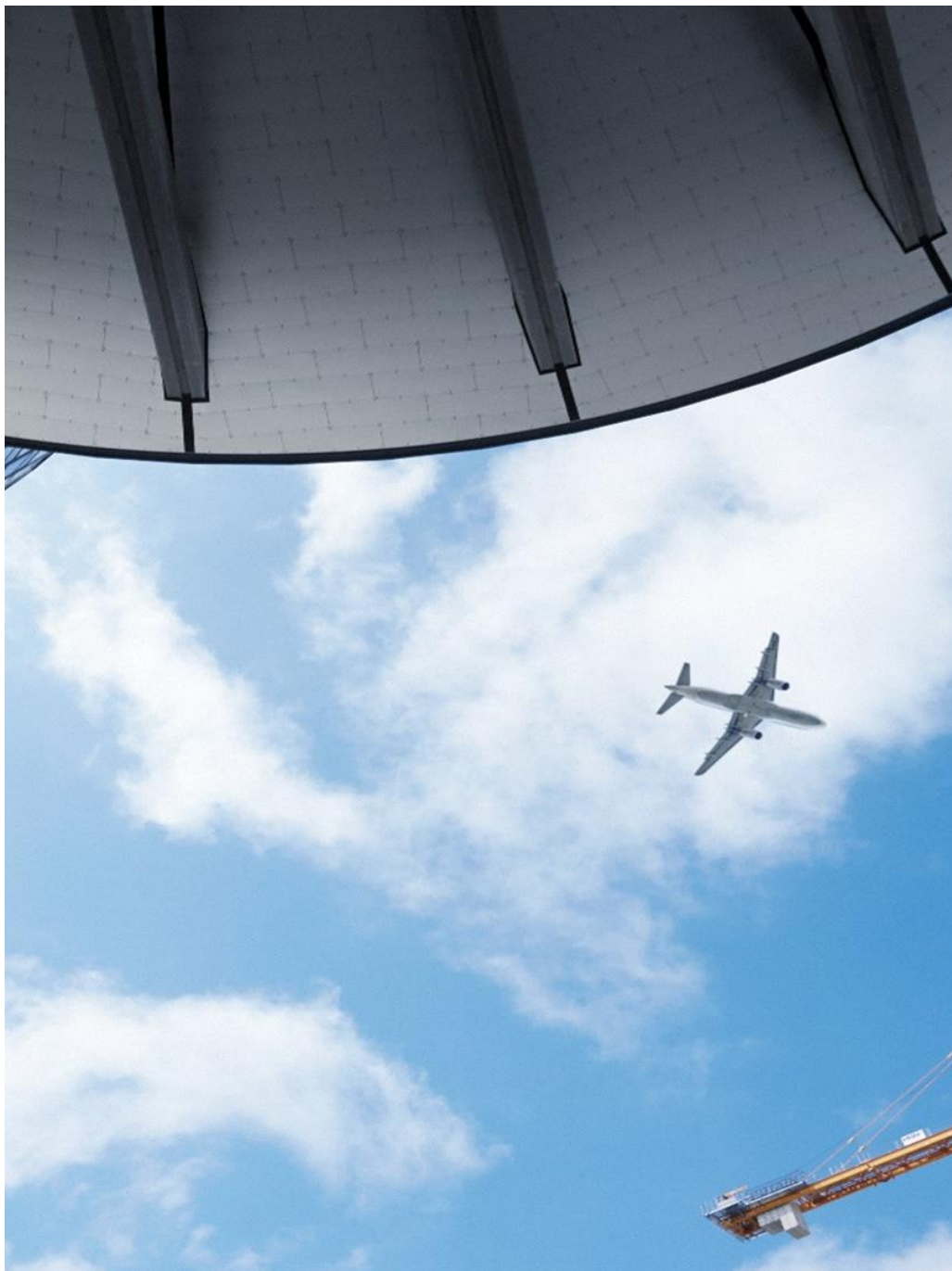


- EAD development is always based on an application from a manufacturer for an ETA
- EOTA has a QA system with a detailed step by step process
- Ensure compliance with CPR Annex II
- Ensure coordination between RTAB-EOTA, EOTA-TAB, EOTA-EC Services and RTAB-applicant
- Ensure transparent and consistent handling of ETA's
- Ensure confidence and credibility of the information in an ETA
- When the EAD is adopted in EOTA, the TAB can assess the relevant documentation and issue the ETA.

# Declaration of Performance

- Based on a harmonized standard or a European Technical Assessment (ETA)
- If there is a harmonized standard or an ETA has been issued, a declaration of performance must be drawn up and the product must be CE marked.
- The declaration of performance is the only way to declare a performance for harmonized properties
- It is about creating trade, not about ensuring safety and health
- No limit values related to fitness for intended use
- The manufacturer selects the properties to be included





# Documentation of new technologies

- For new products or technologies there are no harmonized standards and therefore there is no requirement for mandatory CE marking.
- The national regulations are license to use
- The national building regulations often requires that the performance claims made about the product or technology can be documented
- National regulations often also requires that the fitness for the intended use and compliance with requirements to the product in the specific use can be documented
- In case the product is to be marketed in EU, the European Technical Assessment is an option if it is not covered by a harmonized standard.
- The CE mark provides the documentation for a performance of characteristics, but does not provide information about fitness for the intended use

# Examples of products with ETA's





# Examples of products with ETA's

Glassfibre reinforced polymer elements for load bearing structures



# Examples of products with ETA's

## Glassfibre reinforced polymer elements for load bearing

### Material data for structural profiles – Characteristic values

#### Strength

Material Properties	Unit	Characteristic value
Tensile strength, axial, $f_{tk}$	N/mm <sup>2</sup>	240
Tensile strength, transverse $f_{ty}$ for - Resin "P2600" or "P2607" - Resin "P4506"	N/mm <sup>2</sup>	50
Compression strength, axial, $f_{ck}$	N/mm <sup>2</sup>	35
Compression strength, axial, $f_{cy}$	N/mm <sup>2</sup>	240
Compression strength, transverse, $f_{ct}$	N/mm <sup>2</sup>	90
Pin bearing strength, axial, $f_{pb}$	N/mm <sup>2</sup>	200
Pin bearing strength, transverse, $f_{pbt}$	N/mm <sup>2</sup>	120
Flexural strength, axial, $f_{bx}$	N/mm <sup>2</sup>	240
Flexural strength, transverse, $f_{bt}$	N/mm <sup>2</sup>	60
Interlaminar Shear strength, $\tau_{in}$	N/mm <sup>2</sup>	20
In-plane Shear strength, $\tau_{ov}$	N/mm <sup>2</sup>	40
Shear strength perpendicular to the plane, $f_{LH}$ (Punching shear)	N/mm <sup>2</sup>	50
Shear strength in plane, $f_{ov,torsion}$ (torsion of rectangular hollow sections)	N/mm <sup>2</sup>	40

#### Stiffness and Poisson's ratio

Material Properties	Unit	Characteristic value
Full section modulus, $E_{eff}$	N/mm <sup>2</sup>	24 000
Tensile modulus, axial, $E_{tx}$	N/mm <sup>2</sup>	24 000
Tensile modulus, transverse, $E_{ty}$	N/mm <sup>2</sup>	7 000
Compression modulus, axial, $E_{cx}$	N/mm <sup>2</sup>	24 000
Compression modulus, transverse, $E_{ct}$	N/mm <sup>2</sup>	10 000
Poisson's ratio, $\nu_{tx}$	-	0.23
Poisson's ratio, $\nu_{ty}$	-	0.07
In-plane shear modulus, $G_{xy}$ and $G_{yz}$	N/mm <sup>2</sup>	3 000

#### Strain

Material Properties	Unit	Characteristic value
Tensile failure strain, axial, $\epsilon_{tx}$	%	0.90
Tensile failure strain, transverse, $\epsilon_{ty}$	%	0.60
Compression failure strain, axial, $\epsilon_{cx}$	%	0.90
Compression failure strain, transverse, $\epsilon_{ct}$	%	0.70

#### Other Properties

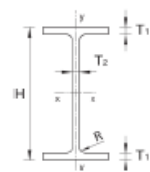
Material Properties	Unit	Characteristic value
Thermal expansion, axial	K <sup>-1</sup>	10 · 10 <sup>-6</sup>
Thermal expansion, transverse	K <sup>-1</sup>	17 · 10 <sup>-6</sup>
Fibre content by weight	%	68% ± 5%
Degree of cure- Differential scanning calorimetry (DSC)	%	<6%
Creep (after 24 hours)	%	<6%

Fiberline Structural profiles and deck elements

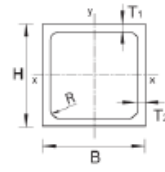
Expression of performance

Annex B2  
of European  
Technical Assessment  
ETA-16/0901

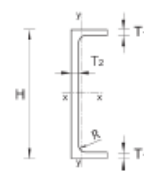
### Cross sections, structural profiles:



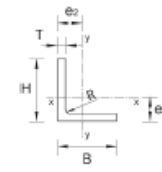
I-section



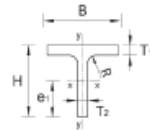
Square hollow section (SHS)



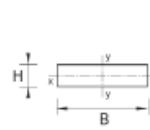
U-section



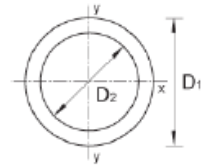
Angle section



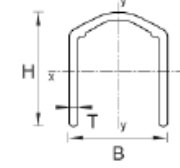
T-section



Flat sheets/plates

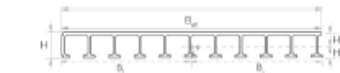


Circular hollow sections (CHS)

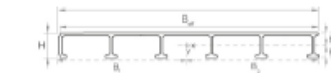


Handrail sections

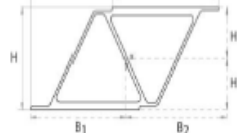
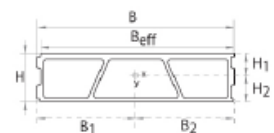
### Cross sections, Deck profiles:



Plank HD



Plank MD



Authorised and notified according to Article 29 of the Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011



European Technical Assessment ETA-16/0901 of 02/06/2017

Technical Assessment Body issuing the ETA and designated according to Article 9 of the Regulation (EU) No 305/2011: ETA-Danmark A/S

Trade name of the construction product:

Product family to which the construction product belongs:

Manufacturer:

Manufacturing plant:

European Technical Assessment contains:

Annex B2 of the European Technical Assessment contains:

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Fiberline Structural profiles

Structural sections made from fibre reinforced polymers (FRP/Glassfiber Composites)

Fiberline Composites A/S  
Barmstedt Allé 5  
DK-5500 Middelfart  
Phone +45 70 13 77 13  
Fax +45 70 13 77 14  
Internet www.fiberline.com  
Fiberline Composites A/S  
Barmstedt Allé 5  
DK-5500 Middelfart

22 pages including 17 annexes which form an integral part of the document

EAD 260001-00-03.03 for Structural sections made from fibre reinforced polymers (FRP/Glassfiber Composites) of April 2016



# Examples of products with ETA's

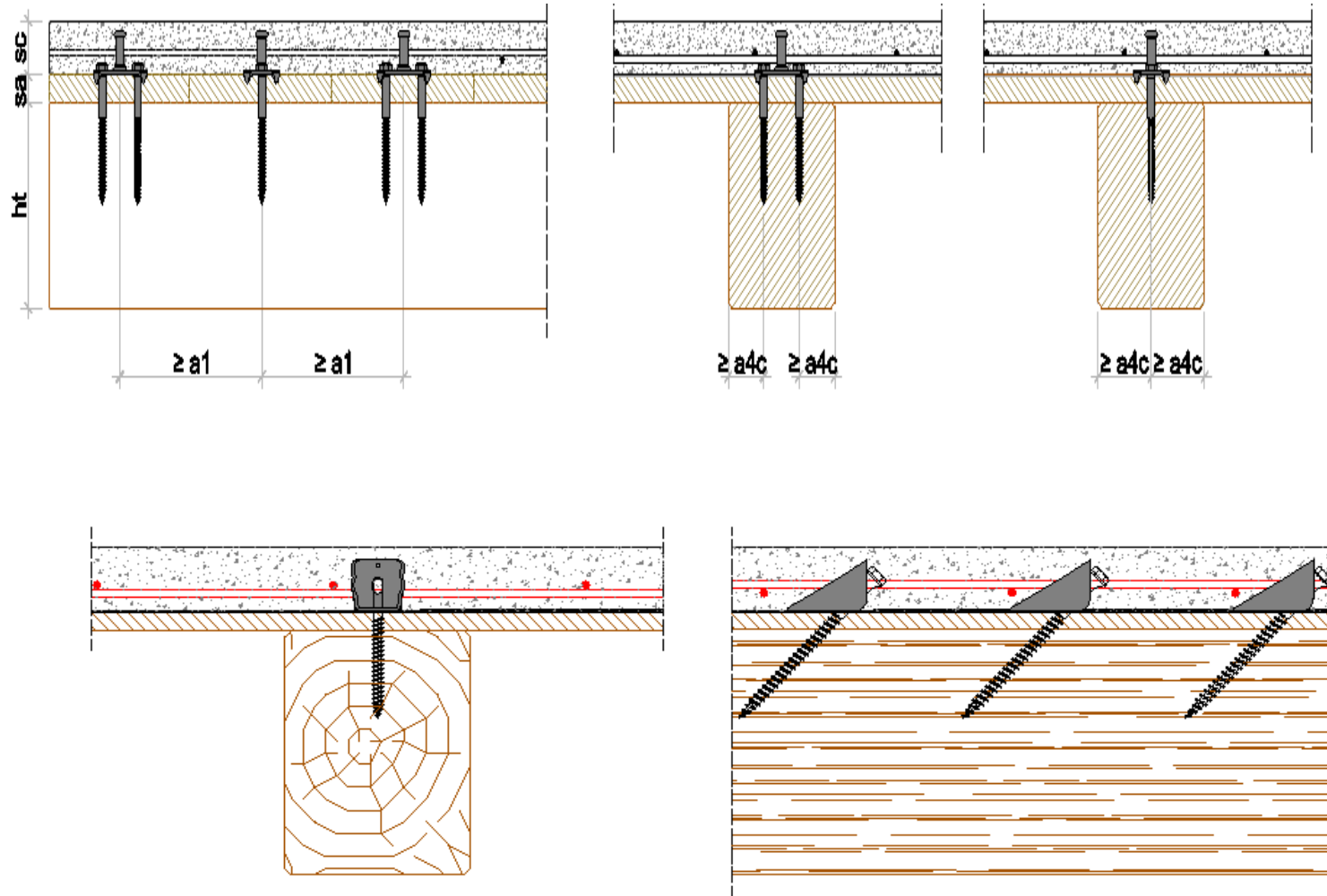


# Examples of products with ETA's

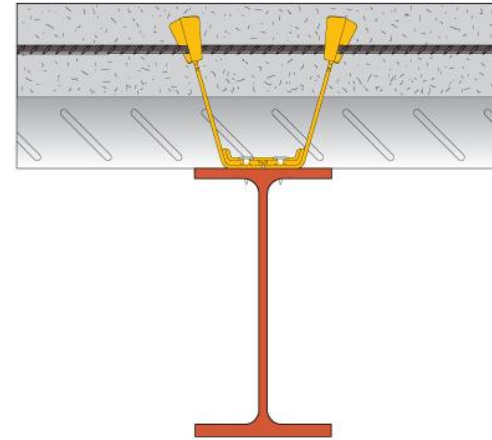
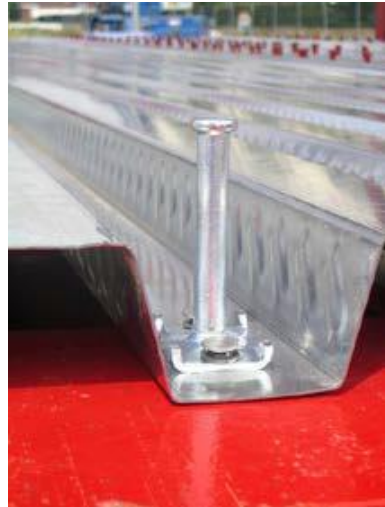
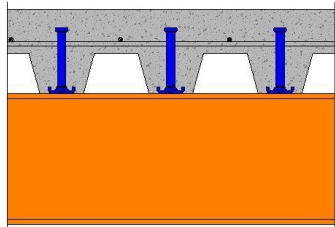
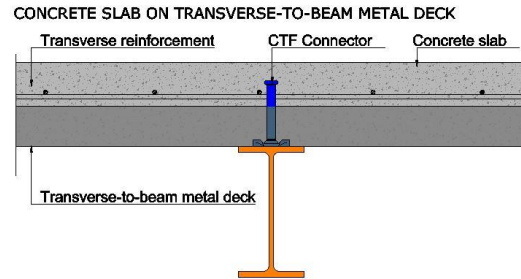




# Examples of products with ETA's



# Examples of products with ETA's



# Basic Work Requirement 7 – Sustainable use of natural resources

## Still being discussed

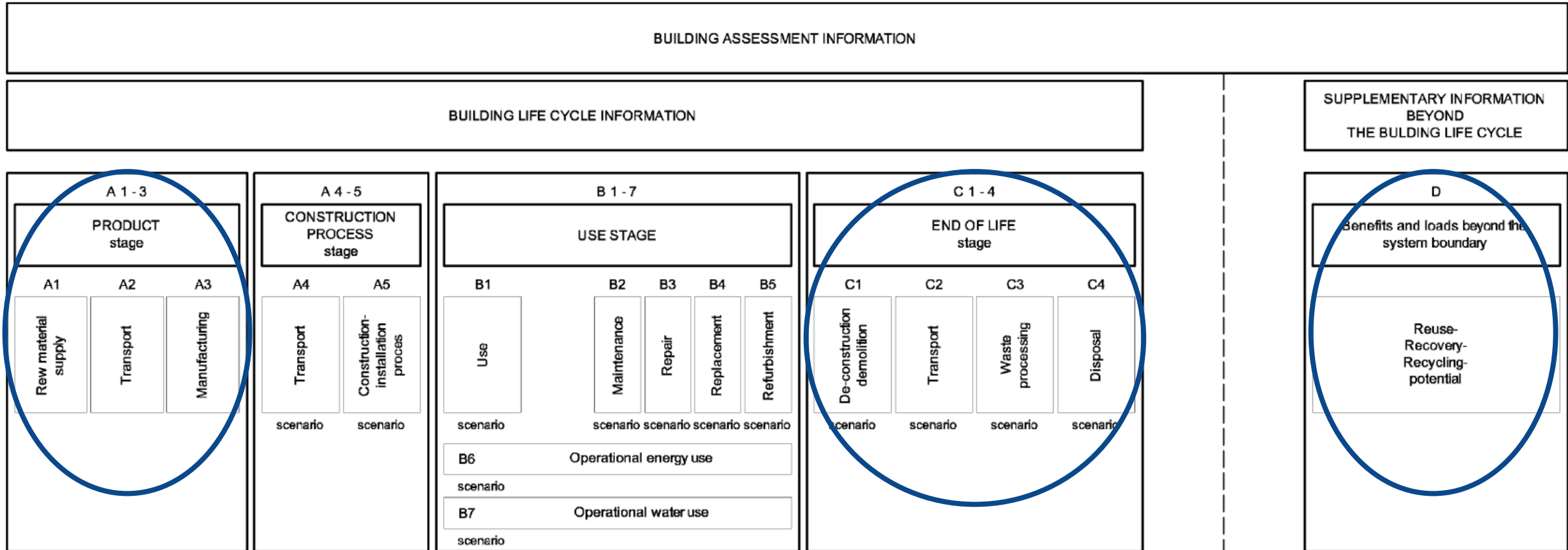
### Possible options on implementing BWR 7:

Performance must be declared based on:

- Full lifecycle of the product
- All indicators according to EN 15804 should be declared
- All indicators according to the modules A1, A2, A3, C and D in EN 15804 must be considered
- The modules A4 (transport) & A5 (installation) are optional
- Module B should not be included.

- implementing BWR 7 requires a revision of the EAD's and harmonized standards

# EN 15804 – Life Cycle Stages





# How can ETA's be used

- More than 9000 ETA's have been issued
- More than 275 EAD's have been published
- Since ETA's in accordance with the CPR are voluntary, it is not possible to require products to have an ETA.
- Only products covered by a harmonized standard are subject to mandatory CE marking
- If the products has an ETA, the product performance is well documented in a common European technical language
- Therefore, ETA's are a useful and essential tool when bringing innovative or other non-standardized products into the constuction process
- It allows for decision makes to have a common Euroepan document with high technical value as basis for their decision
- ETA's has an enhanced advantage and value in relation to the circular economy, since it creates a basis for CE marking new green innovative products, recycled products and reused products, which are typically not covered by harmonsied standars.

A close-up photograph of water splashing onto a blue surface, creating ripples and two distinct water columns. The background is a soft, out-of-focus blue.

# Thank you for listening