

# Circular Economy Ontology Network (CEON) - Construction Module

## Metadata

### IRI

<http://w3id.org/CEON/demo/construction/>

### Title

Circular Economy Ontology Network (CEON) - Construction Module

### Creator

Robin Keskisärkkä

### Contributor

Eva Blomqvist

Huanyu Li

Mikael Lindecrantz

### Date Created

2023-09-14

### License

<https://creativecommons.org/licenses/by/4.0/>

### Version Iri

<http://w3id.org/CEON/demo/construction/0.1/>

### Version Info

0.1

### Preferred Namespace Prefix

construction

### Preferred Namespace Uri

<http://w3id.org/CEON/demo/construction/>

### Description

The Product module of CEON (Circular Economy Ontology Network).

## Classes

### Condition<sup>C</sup>

#### IRI

<http://w3id.org/CEON/demo/construction/Condition>

#### In Range Of

[hasCondition<sup>op</sup>](#)

#### Super Class Of

[FloorTileCondition<sup>C</sup>](#)

### Contaminant<sup>C</sup>

#### IRI

<http://w3id.org/CEON/demo/construction/Contaminant>

#### In Range Of

[hasContaminant<sup>op</sup>](#)

## Dimensional Deviation<sup>c</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/demo/construction/DimensionalDeviation">http://w3id.org/CE0N/demo/construction/DimensionalDeviation</a>
<b><u>In Range Of</u></b>	<a href="#">hasDimensionalDeviation</a> <sup>op</sup>

## Fire Resistance Rating<sup>c</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/demo/construction/FireResistanceRating">http://w3id.org/CE0N/demo/construction/FireResistanceRating</a>
<b><u>In Range Of</u></b>	<a href="#">hasFireResistanceRating</a> <sup>op</sup>
<b><u>Named Individuals</u></b>	<a href="#">F30</a> <sup>ni</sup> <a href="#">F60</a> <sup>ni</sup>

## Fire Resistance Relation<sup>c</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/demo/construction/FireResistanceRelation">http://w3id.org/CE0N/demo/construction/FireResistanceRelation</a>
<b><u>Sub Class Of</u></b>	<a href="#">actorODP:ResourceParticipation</a>

## Floor Tile<sup>c</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/demo/construction/FloorTile">http://w3id.org/CE0N/demo/construction/FloorTile</a>
<b><u>Sub Class Of</u></b>	<a href="#">product:Product</a>

## Floor Tile Condition<sup>c</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/demo/construction/FloorTileCondition">http://w3id.org/CE0N/demo/construction/FloorTileCondition</a>
<b><u>Sub Class Of</u></b>	<a href="#">Condition</a> <sup>c</sup>
<b><u>Named Individuals</u></b>	<a href="#">bad_condition</a> <sup>ni</sup> <a href="#">good_condition</a> <sup>ni</sup> <a href="#">medium_condition</a> <sup>ni</sup>

## Floor Tile Condition Relation<sup>c</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/demo/construction/FloorTileConditionRelation">http://w3id.org/CE0N/demo/construction/FloorTileConditionRelation</a>
<b><u>Sub Class Of</u></b>	<a href="#">actorODP:ResourceParticipation</a>

## Galvanized Steel Material<sup>C</sup>

**IRI** <http://w3id.org/CE0N/demo/construction/GalvanizedSteelMaterial>

**Sub Class Of** [material:Material](#)

## Policy On Treatment<sup>C</sup>

**IRI** <http://w3id.org/CE0N/demo/construction/PolicyOnTreatment>

**In Range Of** [policyOnTreatment](#)<sup>op</sup>

**Named Individuals**

- [refurbish](#)<sup>ni</sup>
- [reprocess](#)<sup>ni</sup>
- [reuse](#)<sup>ni</sup>

## Product Quality<sup>C</sup>

**IRI** <http://w3id.org/CE0N/demo/construction/ProductQuality>

**In Range Of** [hasProductQuality](#)<sup>op</sup>

**Named Individuals**

- [product\\_quality\\_high](#)<sup>ni</sup>
- [product\\_quality\\_low](#)<sup>ni</sup>
- [product\\_quality\\_medium](#)<sup>ni</sup>

## Treatment Policy<sup>C</sup>

**IRI** <http://w3id.org/CE0N/demo/construction/TreatmentPolicy>

**Named Individuals**

- [refurbish](#)<sup>ni</sup>
- [reprocess](#)<sup>ni</sup>
- [reuse](#)<sup>ni</sup>

## Object Properties

### has condition<sup>op</sup>

**IRI** <http://w3id.org/CE0N/demo/construction/hasCondition>

**Sub Property Of** [topObjectProperty](#)<sup>op</sup>

**Domain** [product:ProductObject](#)<sup>C</sup> or [product:Product](#)<sup>C</sup>

**Range** [Condition](#)<sup>C</sup>

## has contaminant<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/demo/construction/hasContaminant">http://w3id.org/CE0N/demo/construction/hasContaminant</a>
<b>Domain</b>	<a href="#">product:Product</a>
<b>Range</b>	<a href="#">Contaminant<sup>c</sup></a>

## has dimension<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/demo/construction/hasDimension">http://w3id.org/CE0N/demo/construction/hasDimension</a>
<b>Sub Property Of</b>	<a href="http://qudt.org/schema/qudt/quantityValue">http://qudt.org/schema/qudt/quantityValue</a>
<b>Super Property Of</b>	<ul style="list-style-type: none"><li>• <a href="#">hasHeight<sup>op</sup></a></li><li>• <a href="#">hasThickness<sup>op</sup></a></li><li>• <a href="#">hasWidth<sup>op</sup></a></li></ul>
<b>Domain</b>	<a href="#">product:Product<sup>c</sup></a> or <a href="#">product:ProductObject<sup>c</sup></a>

## has dimensional deviation<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/demo/construction/hasDimensionalDeviation">http://w3id.org/CE0N/demo/construction/hasDimensionalDeviation</a>
<b>Sub Property Of</b>	<a href="#">topObjectProperty<sup>op</sup></a>
<b>Domain</b>	<a href="#">product:Product</a>
<b>Range</b>	<a href="#">DimensionalDeviation<sup>c</sup></a>

## has distance to recycling plant<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/demo/construction/hasDistanceToRecyclingPlant">http://w3id.org/CE0N/demo/construction/hasDistanceToRecyclingPlant</a>
<b>Sub Property Of</b>	<a href="http://qudt.org/schema/qudt/quantityValue">http://qudt.org/schema/qudt/quantityValue</a>

## has fire resistance rating<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/demo/construction/hasFireResistanceRating">http://w3id.org/CE0N/demo/construction/hasFireResistanceRating</a>
<b>Sub Property Of</b>	<a href="#">topObjectProperty<sup>op</sup></a>
<b>Domain</b>	<a href="#">product:Product<sup>c</sup></a> or <a href="#">product:ProductObject<sup>c</sup></a>
<b>Range</b>	<a href="#">FireResistanceRating<sup>c</sup></a>

## has height<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/demo/construction/hasHeight">http://w3id.org/CE0N/demo/construction/hasHeight</a>
<b>Sub Property Of</b>	<a href="#">hasDimension<sup>op</sup></a>

### has market value for new product<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/demo/construction/hasMarketValueForNewProduct">http://w3id.org/CE0N/demo/construction/hasMarketValueForNewProduct</a>
<b>Sub Property Of</b>	<a href="#">quantity:hasMarketValue</a>
<b>Domain</b>	<a href="#">product:Product</a>

### has market value for reused product<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/demo/construction/hasMarketValueForReusedProduct">http://w3id.org/CE0N/demo/construction/hasMarketValueForReusedProduct</a>
<b>Sub Property Of</b>	<a href="#">quantity:hasMarketValue</a>
<b>Domain</b>	<a href="#">product:Product</a>

### has product quality<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/demo/construction/hasProductQuality">http://w3id.org/CE0N/demo/construction/hasProductQuality</a>
<b>Sub Property Of</b>	<a href="#">topObjectProperty<sup>op</sup></a>
<b>Domain</b>	<a href="#">product:Product<sup>c</sup></a> or <a href="#">product:ProductObject<sup>c</sup></a>
<b>Range</b>	<a href="#">ProductQuality<sup>c</sup></a>

### has recycling potential<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/demo/construction/hasRecyclingPotential">http://w3id.org/CE0N/demo/construction/hasRecyclingPotential</a>
<b>Sub Property Of</b>	<a href="http://qudt.org/schema/qudt/quantityValue">http://qudt.org/schema/qudt/quantityValue</a>
<b>Domain</b>	<a href="#">product:Product<sup>c</sup></a> or <a href="#">product:ProductObject<sup>c</sup></a>

### has recycling separability<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/demo/construction/hasRecyclingSeparability">http://w3id.org/CE0N/demo/construction/hasRecyclingSeparability</a>
<b>Sub Property Of</b>	<a href="http://qudt.org/schema/qudt/quantityValue">http://qudt.org/schema/qudt/quantityValue</a>
<b>Domain</b>	<a href="#">product:ProductObject<sup>c</sup></a> or <a href="#">product:Product<sup>c</sup></a>

### has resistance to earth<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/demo/construction/hasResistanceToEarth">http://w3id.org/CE0N/demo/construction/hasResistanceToEarth</a>
<b>Sub Property Of</b>	<a href="http://qudt.org/schema/qudt/quantityValue">http://qudt.org/schema/qudt/quantityValue</a>
<b>Domain</b>	<a href="#">product:Product</a>

has reuse deconstructability<sup>op</sup>

**IRI** <http://w3id.org/CE0N/demo/construction/hasReuseDeconstructability>

**Sub Property Of** <http://qudt.org/schema/qudt/quantityValue>

**Domain** [product:Product](#)

has system weight<sup>op</sup>

**IRI** <http://w3id.org/CE0N/demo/construction/hasSystemWeight>

**Sub Property Of** <http://qudt.org/schema/qudt/quantityValue>

**Domain** [product:Product<sup>c</sup>](#) or [product:ProductObject<sup>c</sup>](#)

has thickness<sup>op</sup>

**IRI** <http://w3id.org/CE0N/demo/construction/hasThickness>

**Sub Property Of** [hasDimension<sup>op</sup>](#)

has use span<sup>op</sup>

**IRI** <http://w3id.org/CE0N/demo/construction/hasUseSpan>

**Sub Property Of** <http://qudt.org/schema/qudt/quantityValue>

**Super Property Of**

- [hasUseSpanRemaining<sup>op</sup>](#)
- [hasUseSpanTotal<sup>op</sup>](#)

**Domain** [product:Product<sup>c</sup>](#) or [product:ProductObject<sup>c</sup>](#)

has use span remaining<sup>op</sup>

**IRI** <http://w3id.org/CE0N/demo/construction/hasUseSpanRemaining>

**Sub Property Of** [hasUseSpan<sup>op</sup>](#)

has use span total<sup>op</sup>

**IRI** <http://w3id.org/CE0N/demo/construction/hasUseSpanTotal>

**Sub Property Of** [hasUseSpan<sup>op</sup>](#)

has width<sup>op</sup>

**IRI** <http://w3id.org/CE0N/demo/construction/hasWidth>

**Sub Property Of** [hasDimension<sup>op</sup>](#)

policy on treatment<sup>op</sup>

**IRI** <http://w3id.org/CE0N/demo/construction/policyOnTreatment>

**Sub Property Of** [topObjectProperty<sup>op</sup>](#)

**Domain** [product:Product](#)

**Range** [PolicyOnTreatment<sup>c</sup>](#)

installation location<sup>op</sup>

**IRI** <http://w3id.org/CE0N/demo/construction/installationLocation>

**Sub Property Of** [topObjectProperty<sup>op</sup>](#)

## Datatype Properties

has accessories<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/construction/hasAccessories>

**Domain** [product:ProductObject<sup>c</sup>](#) or [product:Product<sup>c</sup>](#)

**Range** [xsd:string](#)

has dismantling method<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/construction/hasDismantlingMethod>

**Sub Property Of** [topDataProperty<sup>dp</sup>](#)

**Domain** [product:ProductObject<sup>c</sup>](#) or [product:Product<sup>c</sup>](#)

**Range** [xsd:string](#)

has installation date<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/construction/hasInstallationDate>

**Sub Property Of** [topDataProperty<sup>dp</sup>](#)

**Domain** [product:ProductObject](#)

**Range** [xsd:date](#)

## has packaging recommendations after dismantling<sup>dp</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/demo/construction/hasPackagingRecommendationsAfterDismantling">http://w3id.org/CE0N/demo/construction/hasPackagingRecommendationsAfterDismantling</a>
<b>Sub Property Of</b>	<a href="#">topDataProperty<sup>dp</sup></a>
<b>Domain</b>	<a href="#">product:Product<sup>c</sup></a> or <a href="#">product:ProductObject<sup>c</sup></a>
<b>Range</b>	<a href="#">xsd:string</a>

## has product description<sup>dp</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/demo/construction/hasProductDescription">http://w3id.org/CE0N/demo/construction/hasProductDescription</a>
<b>Sub Property Of</b>	<a href="#">topDataProperty<sup>dp</sup></a>
<b>Domain</b>	<a href="#">product:Product<sup>c</sup></a> or <a href="#">product:ProductObject<sup>c</sup></a>
<b>Range</b>	<a href="#">xsd:string</a>

## has product id<sup>dp</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/demo/construction/hasProductID">http://w3id.org/CE0N/demo/construction/hasProductID</a>
<b>Sub Property Of</b>	<a href="#">topDataProperty<sup>dp</sup></a>
<b>Domain</b>	<a href="#">product:ProductObject<sup>c</sup></a> or <a href="#">product:Product<sup>c</sup></a>
<b>Range</b>	<a href="#">xsd:int</a>

## has production date<sup>dp</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/demo/construction/hasProductionDate">http://w3id.org/CE0N/demo/construction/hasProductionDate</a>
<b>Sub Property Of</b>	<a href="#">topDataProperty<sup>dp</sup></a>
<b>Domain</b>	<a href="#">product:ProductObject</a>
<b>Range</b>	<a href="#">xsd:date</a>

## has production site<sup>dp</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/demo/construction/hasProductionSite">http://w3id.org/CE0N/demo/construction/hasProductionSite</a>
<b>Sub Property Of</b>	<a href="#">topDataProperty<sup>dp</sup></a>
<b>Domain</b>	<a href="#">product:Product<sup>c</sup></a> or <a href="#">product:ProductObject<sup>c</sup></a>
<b>Range</b>	<a href="#">xsd:string</a>



has refurbishment method<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/construction/hasRefurbishmentMethod>

**Sub Property Of** [topDataProperty](#)<sup>dp</sup>

**Domain** [product:ProductObject](#)<sup>c</sup> or [product:Product](#)<sup>c</sup>

**Range** [xsd:string](#)

has take back program from original manufacturer<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/construction/hasTakeBackProgramFromOriginalManufacturer>

**Sub Property Of** [topDataProperty](#)<sup>dp</sup>

**Domain** [product:Product](#)

**Range** [xsd:boolean](#)

has take back program other manufacturer<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/construction/hasTakeBackProgramOtherManufacturer>

**Sub Property Of** [topDataProperty](#)<sup>dp</sup>

**Domain** [product:Product](#)

**Range** [xsd:boolean](#)

has technical requirements for take back for recycling<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/construction/hasTechnicalRequirementsForTakeBackForRecycling>

**Sub Property Of** [topDataProperty](#)<sup>dp</sup>

**Domain** [product:Product](#)<sup>c</sup> or [product:ProductObject](#)<sup>c</sup>

**Range** [xsd:string](#)

has technical requirements for take back for reuse<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/construction/hasTechnicalRequirementsForTakeBackForReuse>

**Sub Property Of** [topDataProperty](#)<sup>dp</sup>

**Domain** [product:Product](#)<sup>c</sup> or [product:ProductObject](#)<sup>c</sup>

**Range** [xsd:string](#)

is contaminated<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/construction/isContaminated>

**Sub Property Of** [topDataProperty<sup>dp</sup>](#)

**Domain** [product:Product<sup>c</sup>](#) or [product:ProductObject<sup>c</sup>](#)

**Range** [xsd:boolean](#)

construction year<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/construction/constructionYear>

**Sub Property Of** [topDataProperty<sup>dp</sup>](#)

**Range** [xsd:gYear](#)

has dismantling instruction<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/construction/hasDismantlingInstruction>

**Sub Property Of** [topDataProperty<sup>dp</sup>](#)

**Range** [xsd:anyURI](#)

## Annotation Properties

contributor<sup>ap</sup>

**IRI** <http://purl.org/dc/terms/contributor>

created<sup>ap</sup>

**IRI** <http://purl.org/dc/terms/created>

creator<sup>ap</sup>

**IRI** <http://purl.org/dc/terms/creator>

description<sup>ap</sup>

**IRI** <http://purl.org/dc/terms/description>

license<sup>ap</sup>

**IRI** <http://purl.org/dc/terms/license>

<b>title</b> <sup>ap</sup>	
<b>IRI</b>	<a href="http://purl.org/dc/terms/title">http://purl.org/dc/terms/title</a>
<b>preferred namespace prefix</b> <sup>ap</sup>	
<b>IRI</b>	<a href="http://purl.org/vocab/vann/preferredNamespacePrefix">http://purl.org/vocab/vann/preferredNamespacePrefix</a>
<b>preferred namespace uri</b> <sup>ap</sup>	
<b>IRI</b>	<a href="http://purl.org/vocab/vann/preferredNamespaceUri">http://purl.org/vocab/vann/preferredNamespaceUri</a>
<b>covers requirements</b> <sup>ap</sup>	
<b>IRI</b>	<a href="http://www.ontologydesignpatterns.org/schemas/cannotation-schema.owl#coversRequirements">http://www.ontologydesignpatterns.org/schemas/cannotation-schema.owl#coversRequirements</a>

## Namespaces

:	<a href="http://w3id.org/CEON/demo/construction/">http://w3id.org/CEON/demo/construction/</a>
<b>actor</b>	<a href="http://w3id.org/CEON/ontology/actor/">http://w3id.org/CEON/ontology/actor/</a>
<b>actorODP</b>	<a href="http://w3id.org/CEON/ontology/actorODP/">http://w3id.org/CEON/ontology/actorODP/</a>
<b>datasheet</b>	<a href="http://w3id.org/CEON/ontology/datasheet/">http://w3id.org/CEON/ontology/datasheet/</a>
<b>dcterms</b>	<a href="http://purl.org/dc/terms/">http://purl.org/dc/terms/</a>
<b>material</b>	<a href="http://w3id.org/CEON/ontology/material/">http://w3id.org/CEON/ontology/material/</a>
<b>odp</b>	<a href="http://www.ontologydesignpatterns.org/schemas/cannotationschema.owl#">http://www.ontologydesignpatterns.org/schemas/cannotationschema.owl#</a>
<b>owl</b>	<a href="http://www.w3.org/2002/07/owl#">http://www.w3.org/2002/07/owl#</a>
<b>product</b>	<a href="http://w3id.org/CEON/ontology/product/">http://w3id.org/CEON/ontology/product/</a>
<b>prov</b>	<a href="http://www.w3.org/ns/prov#">http://www.w3.org/ns/prov#</a>
<b>quantity</b>	<a href="http://w3id.org/CEON/ontology/quantity#">http://w3id.org/CEON/ontology/quantity#</a>
<b>rdf</b>	<a href="http://www.w3.org/1999/02/22-rdf-syntax-ns#">http://www.w3.org/1999/02/22-rdf-syntax-ns#</a>
<b>rdfs</b>	<a href="http://www.w3.org/2000/01/rdf-schema#">http://www.w3.org/2000/01/rdf-schema#</a>
<b>vann</b>	<a href="http://purl.org/vocab/vann/">http://purl.org/vocab/vann/</a>
<b>xsd</b>	<a href="http://www.w3.org/2001/XMLSchema#">http://www.w3.org/2001/XMLSchema#</a>

Legend

c	Classes
op	Object Properties
dp	Datatype Properties
ap	Annotation Properties