



Conditie classificatie.

Isolatie Conditie classificatie.

- Een toepassing voor het beoordelen van isolatie, gebruikmakend van de NEN 2767-1 of de CEN 17385.
- Beoordeling van de conditie, gebruikmakend van
 - visuele inspectie (VT) en/of
 - Thermografische inspectie (TT).
- Vaststellen van het risico op
 - Corrosie Onder Isolatie en/of
 - het risico op kosten ten gevolge van verlies aan vermogen (warmte).

Beoordelingsmethode.

Severity	Degradation level	Extent				
		Class 1:	Class 2:	Class 3:	Class 4:	Class 5:
		Minimal (≤2 %)	Insubstantial (>2 %, ≤10 %)	Substantial (>10 %, ≤30 %)	Significant (>30 %, ≤70 %)	Widespread (>70 %)
Minor defects	1: Low	Y1	Y1	Y1	Y1	Y2
	2: Medium	Y1	Y1	Y1	Y2	Y3
	3: High	Y1	Y1	Y2	Y3	Y4
Serious defects	1: Low	Y1	Y1	Y1	Y2	Y3
	2: Medium	Y1	Y1	Y2	Y3	Y4
	3: High	Y1	Y2	Y3	Y4	Y5
Critical defects	1: Low	Y1	Y1	Y2	Y3	Y4
	2: Medium	Y1	Y2	Y3	Y4	Y5
	3: High	Y2	Y3	Y4	Y5	Y6

Legenda:

Condition class:

Condition class:	Interpretation:
Cond. class: 1	Excellent
Cond. class: 2	Good
Cond. class: 3	Fair
Cond. class: 4	Poor
Cond. class: 5	Bad
Cond. class: 6	Very Bad

Result: 4

Defect severity:	Degradation level:	Extent:	Condition class:
Critical	2: Medium	Class 4	Condition class: 4

The degradation is widespread. Elements have widespread defects in finish and function. There may be a number of (severe) defects that can lead to a loss of function. Reliability is compromised. With regard to the total defect impact, the elements are evaluated as degraded. This may be partly caused by faults in material choice, poor basic quality, execution and ageing.

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Minor defects	1: Low	X2	Y1	Y1	Y1	Y1	Y2
	2: Medium	X3	Y1	Y1	Y1	Y2	Y3
	3: High	X4	Y1	Y1	Y2	Y3	Y4
Serious defects	1: Low	X3	Y1	Y1	Y1	Y2	Y3
	2: Medium	X4	Y1	Y1	Y2	Y3	Y4
	3: High	X5	Y1	Y2	Y3	Y4	Y5
Critical defects	1: Low	X4	Y1	Y1	Y2	Y3	Y4
	2: Medium	X5	Y1	Y2	Y3	Y4	Y5
	3: High	X6	Y2	Y3	Y4	Y5	Y6

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	2: Medium	X3	Y1	Y1	Y1	Y2	Y3
	3: High	X4	Y1	Y1	Y2	Y3	Y4
Serious defects	1: Low	X3	Y1	Y1	Y1	Y2	Y3
	2: Medium	X4	Y1	Y1	Y2	Y3	Y4
	3: High	X5	Y1	Y2	Y3	Y4	Y5
Critical defects	1: Low	X4	Y1	Y1	Y2	Y3	Y4
	2: Medium	X5	Y1	Y2	Y3	Y4	Y5
	3: High	X6	Y2	Y3	Y4	Y5	Y6

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Critical defects	1: Low	X4	Y1	Y1	Y2	Y3	Y4
	2: Medium	X5	Y1	Y2	Y3	Y4	Y5
	3: High	X6	Y2	Y3	Y4	Y5	Y6

Please note: In case of a double input, the double value is marked in yellow.
When you filter on each score, you can compare results.
Eliminating the yellow elements, displays the final score table.

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Serious	3: High	X5	Y1	Y2	Y3	Y4	Y5
Critical	3: High	X6	Y2	Y3	Y4	Y5	Y6

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Serious	3: High	X5	Y1	Y2	Y3	Y4	Y5
Critical	3: High	X6	Y2	Y3	Y4	Y5	Y6

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X3	Y1	Y1	Y1	Y2	Y3
X4	Y1	Y1	Y2	Y3	Y4
X5	Y1	Y2	Y3	Y4	Y5
X6	Y2	Y3	Y4	Y5	Y6

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SE-condition:	Extent:	Condition class:
4	Class 4	Condition class: 3

The degradation is identifiable in places. Elements have defects in finish, material and components in places. Elements may occasionally be degraded without critical consequences. Well-executed and long-lasting repairs may be regularly undertaken. Repairs using less suitable means may also have been carried out in places. The technical state is qualified as reasonable with respect to the total defect impact. The quality of the materials applied and/or defects in design, detailing and execution play a significant role in this.

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X3	Y1	Y1	Y1	Y2	Y3
X4	Y1	Y1	Y2	Y3	Y4
X5	Y1	Y2	Y3	Y4	Y5
X6	Y2	Y3	Y4	Y5	Y6

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CUI-project “BP voor ISOLatie Cond. Classificatie.

Voorlopige conclusies:

- Géén van de beschikbare documenten bevat sturing voor:
 - Relateren van bevindingen aan al dan niet waarschijnlijkheid inlek en het nemen van beheersmaatregelen al plaatje vanuit ontwerp”.

ToolBP_CuiManagement(Aug20).xlsx - Excel

Inspectie van isolatie.

leer om functionele eisen, voor de functie: afschermen van onderliggende isolatie tegen omgevingsinvloeden.

t de inspectie van de toestand van de beplating met de waterdichte afwerking.

g is daarmee: in welke mate is de isolatie in staat om inlek/inwateren te voorkomen; lekdicht = géén inwatering.

ouw kan een categorie 4 van toepassing zijn indien afwatering naar/in de isolatie mogelijk is.

ersmaatregel kan eruit bestaan dat een risicoanalyse met Fitness For Purpose wordt uitgevoerd.

	Toelichting:	Concreet:	Referentiebeeld:
ngbare regime ent.	Nieuw, nét geplaatst, voldoet aan nieuwbouw eisen (CINI etc).	Nieuwbouw kwaliteit zonder inwatering.	
ngbare regime ent.	Gebruikt, voldoet aan alle eisen.	Niet vervormd, geen inwatering.	
ngbare regime ent.	Gebruikt, beperkte afwijking zonder gevolgen voor het voorkomen van inwateren.	Vervormd, geen inwatering.	
en 6 jaar.	Als 2, met afwijking die tot inwatering kan leiden.	Inwatering valt NIET uit te sluiten.	

framework om structuur verder te detailleren.
kans op inlek.

g / intensiteit is toepasbaar om overzicht te genereren

ciency Directive (EED) vraagt om een geïntegreerde



Single element Cond	Class 1:	Class
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A reference case on condition classification.

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1. Introduction.

The objective of this case history is to describe the particular circumstances which can be found when an insulated asset is inspected for the purpose of condition assessment and the related condition classification as per CEN 17385 (Ref. 1). This in particular with the perspective that the insulation should be able to perform as required, meaning: keep moisture out and thereby protect the asset against corrosion under insulation (see Ref. 3). With the help of case histories, the user can find the adequate condition class that is relevant from this perspective and use this as the framework of QA/QC of insulation (Ref. 2).

2. Terms of reference.

This case history makes use of the next reference framework:

- Ref. 1. CEN 17385; Method for condition assessment of immobile constructed assets (1990)
- Ref. 2. Best Practise for Insulation Condition Classification (BPIsCC); WCM; 2022.
- Ref. 3. Best Practise for Risk Based CUI Management; WCM; Report R250-01201-1 Rev.1 (2020).
- Ref. 4. During Corrosion Atlas; A collection of illustrated cases. 3rd Edition. Elsevier (2018) ISBN: 978-0-444-64269-1

3. Case:

Material cladding: Aluminum
Asset: Product column
Condition: Class 4

Insulation: Mineral wool
Material: Carbon steel
Argument: Opening in insulation covering, water ingress is possible as resulting from the horizontal plane and insufficient protection.

Number: 5

Temp.: 95°C

Time in use: In service since 1967 (54 yr)

Aspects: Almost 50% of the original wall-thickness appeared to be lost..

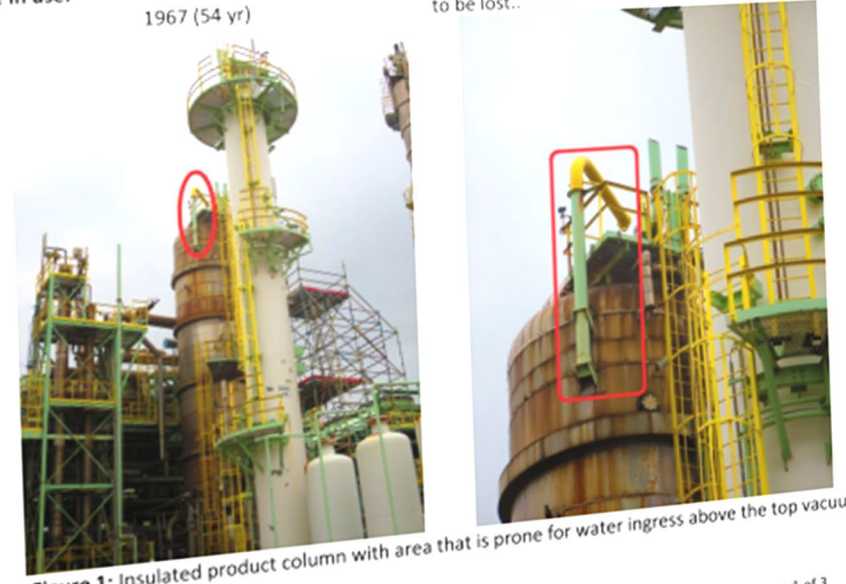


Figure 1: Insulated product column with area that is prone for water ingress above the top vacuum ring of column.

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ber)

Conditie classificatie.

- Voorlichting Energiebesparingsplicht Min. EZ (16 Mei 2022):
- Onderzoeksplicht *ener*
- Terugverdien-criterium
- Isolatie-scan.



Isolatiescan

A) Beleidsverklaring

- ✓ Relevante installaties en leidingwerk zijn in kaart gebracht (conform B))
- ✓ Beschrijving eisen aan ontwerp van de leidingsystemen
- ✓ Een onderhouds- en vervangingsstrategie (incl frequentie van de inspectie)

B) Inventarisatie isolatie van leidingen en appendages + specificatie besparingsmaatregelen

- ✓ Ongeïsoleerde leidingen, appendages, tanks etc.
- ✓ Beschadigde en verwijderde isolatie die moet worden hersteld
- ✓ Isolatie met gebreken zoals condens- of ijsvorming
- ✓ Oude isolatie gebaseerd op achterhaalde berekeningen
- ✓ Nieuwe installaties en leidingwerk

Isolatie Conditie classificatie (EED).

Uitgangspunten:

- Temp. meting (IR).
- Conditie beoordeling
- Gap t.a.v. ontwerp.
- Terugverdienmodel
- „ mét beslissing op Tagniveau.

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Vragen?

