

# Creosote

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## R&D and alternative treatments for long-lasting service life

NTR conference 2022

Oslo, November 9-11

# Status of creosote as wood preservative

COMMISSION IMPLEMENTING REGULATION (EU) 2022/1950

of 14 October 2022



EU:

- only for poles (electricity and telecommunication) and sleepers from April 30, 2023



Norway:

- no placement on national marked after October 27, 2023 (180 days transition period)
- production for international marked still allowed



# Research activities on substitutes

Project	Products	Country(ies)	Project time	Funding
CreoSub	Poles, sleepers, bridges	NO (Treteknisk), DE (Uni Göttingen), UK	2014 - 2017	WoodWisdom era net
Tre i marint miljø	Marine applications	NO (NIBIO)	2019	RF/Oslofjordfondet
Fanérstolper	Poles	SE (RISE)	2016 - 2018	Energiforsk
Bahnschwelle 2020	Sleepers	AT (Holzforschung Austria)	2014 - 2017	FFG Basisprogramm
SYSchwelle	Sleepers	DE (Uni Göttingen)	2017 - 2019	BMWK
LVL Mast	Poles	DE (Uni Göttingen)	2017 – 2020	FNR
RWE	Poles	DE (Uni Göttingen)	2008 - 2011	RWE AG
National Institute for Public Health and the Environment; RIVM	Sleepers	NL (RIVM)	2020	ProRail

**...and most likely more...**

# ...and many industrial initiatives...



**DALANEENERGIEN** NO

AKTUELT E-MAGASIN OM OSS DALANE ENERGI

## Markedets mest miljøvennlige kraftstolper på Hetlandsheia

**SNCF**  
 RÉSEAU

The network

### Finding alternatives to creosote : SNCF Réseau is committed

NEWS Published on 06/28/2021 - updated on 06/25/2021

The European Union wants to ban the use of creosote, a biocide used to treat the wood of railway sleepers. SNCF Réseau has taken the lead: the company is spearheading the European search for alternatives. Here is an update on the trials conducted with the support of the start-up Durwood.



## Skageraknytt

Et magasin fra Skagerak Energi Hva leter du etter?

av forslagene går ut på å grave riller, som øker friksjonen og sikkerheten.



### 35 STOLPER

Arbeidet med å teste ut stolpene har startet i lavspentnettet, og fortsetter sannsynligvis på andre spenningsnivåer som benytter trestolper. I skogen hos Grønvold og lærlingene er det tolv stolper som byttes. Totalt er det 35 kompositstolper som er med i pilotprosjektet.

# List of preservatives for class NTR A (2022-01-01)

	Wood preservative	Actives	Retention [kg/m <sup>3</sup> sapwood]	
CB + triazoles	Bochemit Forte Profi	Cu, tebuconazole, propiconazole	22.0	
	Tanalith E3463/3475	Cu, tebuconazole, propiconazole	20.0	
ACQ	Celcure AC 500*	Cu, boron, benzalkonium chloride	22.0	
	Celcure MC65	Cu, DDACarbonate, DDAC	22.0	
	Celcure MC-T4*	Cu, tebuconazole	11.0	
	Impralit KDS*	Cu, polymeric betain, boron	14.0	
	Impralit KDS 4*	Cu, polymeric betain, boron	28.0	
	Impralit ACQ 1900*	Cu, benzalkonium chloride	36.0	
	Impralit ACQ 2200*	Cu, boron, benzalkonium chloride	22.0	
	Korasit KS2*	Cu, N-didecyl-N methylpoly (oxyethyl) ammonium propionate	20.0	
	Other waterborne	Wolmanit CX-8*	Cu, Cu-HDO, boron	18.0
		Wolmanit CX-8N*	Cu, Cu-HDO	18.0
Wolmanit CX-WB		Cu, Cu-HDO	18.0	
Wolmanit CX-10*		Cu, Cu-HDO, boron	15.0	
Oil-based	Tanasote S40	Cu hydroxide, DDACarbonate, Penflufen	85.0	

# New oil-based preservatives

- Tanasote (Arxada) => on NTR list
- Pole/Sleeper Protect (Koppers) => not on NTR list
- QNAP (NISUS) => not on NTR list



# Combi-protection (preservative + oil)

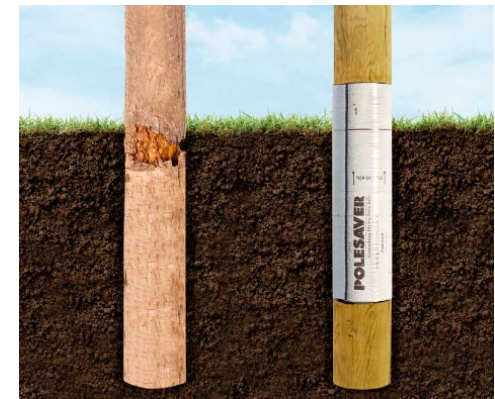
- RVP Repellent fra Stab Suecia and Rundvirke Poles
  1. impregnation with waterborne preservative (NWPC approved)
  2. impregnation with oil (non-biocidal)
- Research collaboration with SLU



Source: Rundvirke Poles

# Combi-protection (preservative + sleeve)

- Permadur®
  - Preservative: Cu-based (mainly Wolmanit CX 8 (25 kg/m<sup>3</sup>) and Korasit KS (33 kg/m<sup>3</sup>))
  - Sleeve: metal foil + outer thermoplastic shrink sleeve
- PoleProtect®
  - Preservatives: various
  - Sleeve: inner thermoplastic liner + outer thermoplastic shrink sleeve



# Without wood preservatives

- WOPAS® (untreated spruce/pine with PE)
- Spruce veneer poles
- Bamboo in PE foam
- Ciol®
- .....



Source: [www.hallingdolen.no](http://www.hallingdolen.no)



Source: [https://energiteknikk.net/wp-content/uploads/2021/03/sun\\_vertikal1-2048x1536.jpg](https://energiteknikk.net/wp-content/uploads/2021/03/sun_vertikal1-2048x1536.jpg)



# Life after creosote. What to do?

- Lots of products, lots of promises => difficult to keep an overview
- We lack long-term empirical data => service life prediction hardly possible
- More and more co-biocides are excluded from BPR => difficult to obtain long-term data
- In case of poles => worth to gain experience with sleeves, e.g. Permadur® or Polesaver®
- Preservative-treated products => use NWPC approved treatments
- Set out and follow up test products  
=> impregnation of full-size product may be trickier than expected  
=> we need long-time data from full-size products in-service