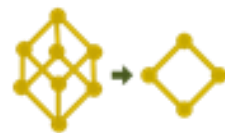


WOPAS

What projects are WOPAS used for?



REFERENCES

There are many potential applications for WOPAS technology combining wood and polyethylene. The main drivers and common denominators are that the poles are non-toxic, long lasting, low carbon footprint and designed for material recycling for the circular economy. Avoiding risk of corrosion is another important aspect, in particular for Marine and Agriculture.

I. ENERGY

WOPAS power poles have been installed from Svalbard in the Arctic Ocean to the Mediterranean in the south, up to 132 kV. Installations have been made at high altitude with helicopter, in water protection areas, arable land, swamplands, urban areas and more. Pre-studies are also made for 420 kV, WOPAS glulam lattice structure.

Customer:	Fagne AS (ex Haugaland Kraftnett), Haugesund, Norway
Contract / installation period:	2022
Delivery:	112 poles 6-15m
Description:	Poles for water protection area



Customer:	Statnett, Norway
Contract / installation period:	2023
Delivery:	12 poles 14-19m
Description:	Lakselv, Norway, on the edge of the Arctic Ocean



Datum: 2023-12-13

Customer:	EON, Sweden
Contract / installation period:	2018-2023
Delivery:	Many poles, from low voltage up to 23m 132 kV
Description:	All over Sweden



Customer:	Craftor, project Brudaremossen, Gothenburg, Sweden
Contract / installation period:	Q1 2022
Delivery:	WOPAS sleepers for powerpole stay wires
Description:	WOPAS sleepers in combination with fittings from Necks.



Datum: 2023-12-13

Customer:	ONE Nordic
Contract / installation period:	Q1 2022
Delivery:	WOPAS system pole Robust ø 19cm, 2.5m
Description:	WOPAS poles for cabinets



Customer:	Craftor, county of Uppland, Sweden
Contract / installation period:	Q2 and Q3 2023
Delivery:	WOPAS system pole Robust ø 19cm
Description:	WOPAS poles for cabinets



II. MARINE

Customer:	Munck Havne og Anlegg, project Walsted shipyard, Thurø, DK
Contract / installation period:	Q1 2022
Delivery:	28x combo piles 12+6m (12m PE-clad WOPAS cylindrical ø 30cm + 6m naked spruce ø 30cm)
Description:	Upgrading of shipyard facilities



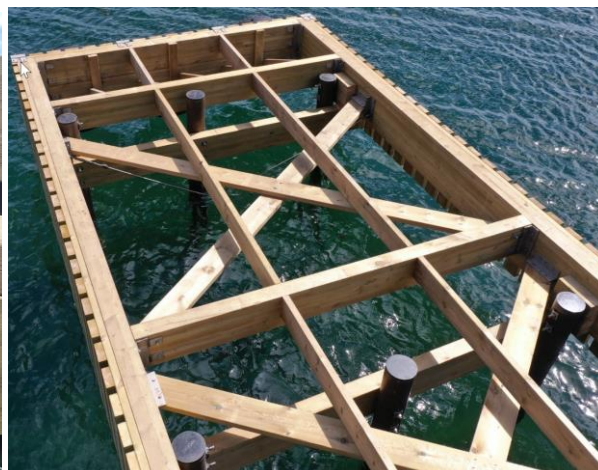
Customer:	Korsør Lystbådehavn, Great Belt, Denmark
Contract / installation period:	Q1 2022, and additional order in 2023
Delivery:	416 Robust ø 19cm cylindrical system piles, 8-9m and line holder
Description:	Total upgrading of marina dock piles



Customer:	Hestehovedet Lystbådehavn, Nakskov
Contract / installation period:	2021 - 2022
Delivery:	166 pcs Robust system piles ø 19cm, 5-9m
Description:	Repeated orders (15+31+30+90) during 2021 and 2022 used for marine construction and dock piles.



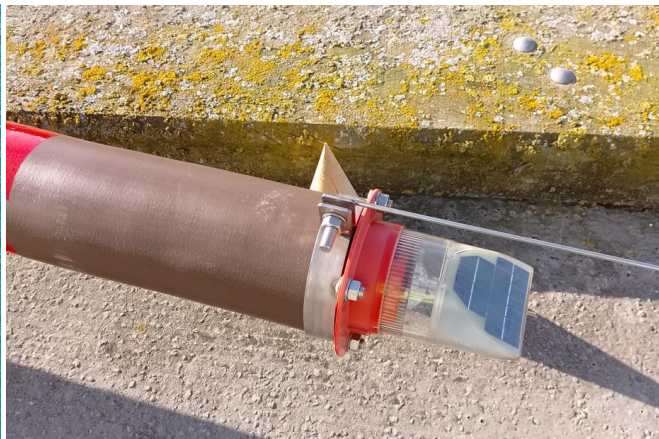
Customer:	Midstøl Sjø AS, marine entrepreneur, Arendal, Norway
Contract / installation period:	2020-2022
Delivery:	41 piles 6-12m, distributed on 6 orders.
Description:	Midstøl Sjø AS has used WOPAS since 2018.



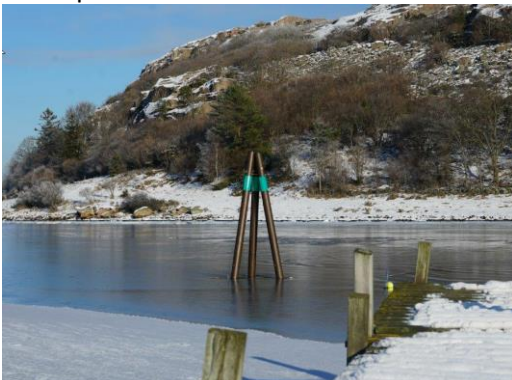
Customer: Tallerud Sjöentreprenad AB, Sweden
Contract / installation period: 2018-2023
Delivery: 100+ piles 6-12m to many different marine projects, Strömstad area.
Description: Marine entrepreneur Tallerud Sjöentreprenad AB has used WOPAS since 2018 for projects in northwest Sweden and the fjord of Oslo.



Customer: Molslinjen / Langelandslinjen, Denmark
Contract / installation period: Delivered in 2022, installed 2023
Delivery: 1 pcs.
Description: Navigation mark off Tårs ferry quay, Great Belt.



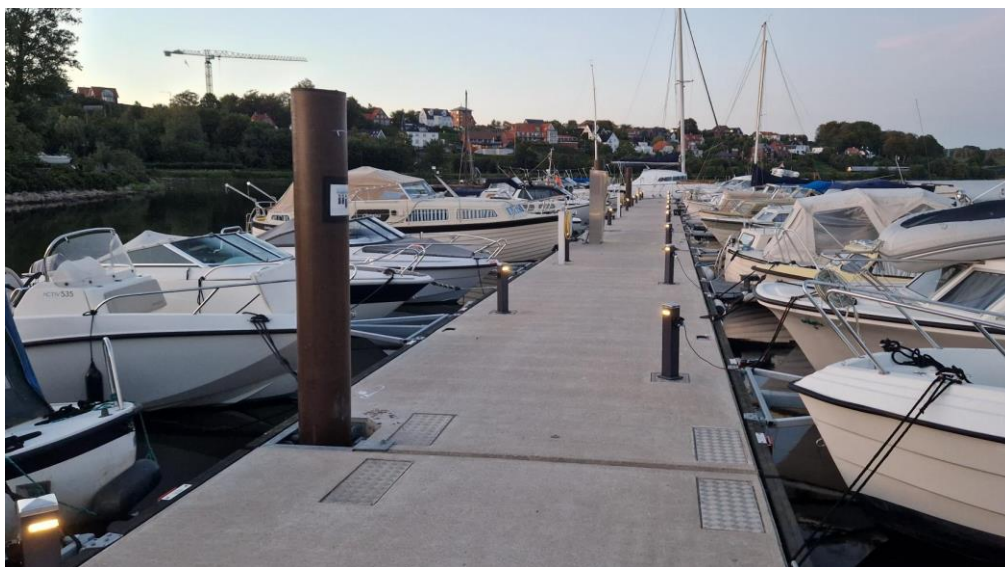
Customer: Frog Marine, project Sotekanalen fairway, Sweden
Contract / installation period: Delivered in 2022, installed 2023
Delivery: 24 pcs cylindrical Robust ø 19cm, 12m
Description: Dolphin navigation mark, Sotekanalen, west Sweden



Customer:	Municipality in Vestfold area, Norway
Contract / installation period:	Delivered and installed autumn 2022
Delivery:	4 pcs Robust ø 19cm cylindrical system piles, 11m
Description:	WOPAS poles replacing creosote in public recreational area

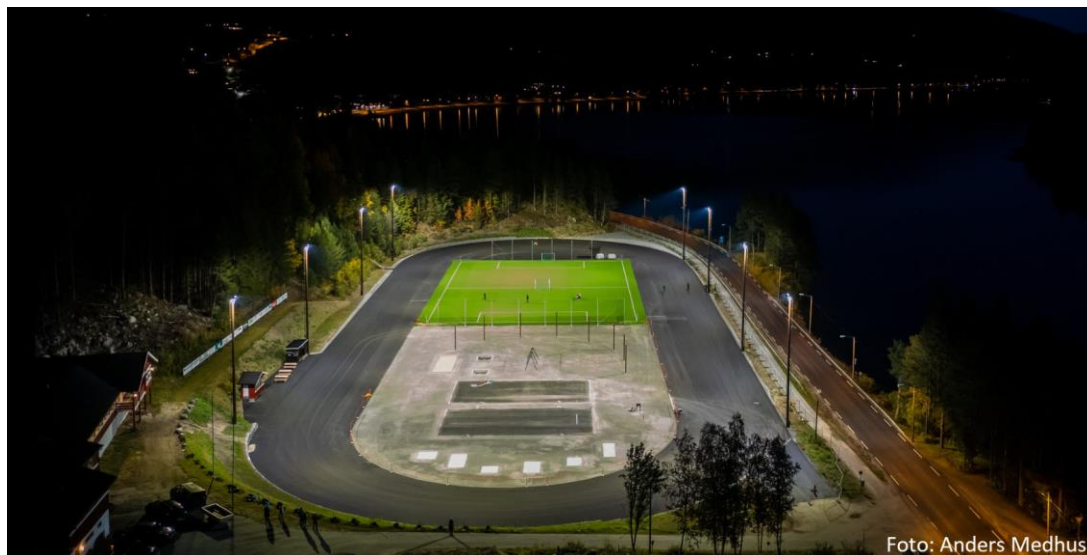


Customer:	Kolding Lystbådehavn / SF Pontona Denmark
Contract / installation period:	Delivered and installed spring 2021
Delivery:	5 pcs cylindrical combo piles ø 32 cm, 24m
Description:	Pile guide



III. LIGHTING

Customer:	Hol IL, Norway
Contract / installation period:	2022
Delivery:	8x 21m poles, 4x 6m ø 13cm, 8x 4m ø 19cm, 8x cabinet
Description:	Hol sports association used WOPAS for a total upgrade of its ice skating and multi-use stadium.



Customer:	Otera Traftec AS, Norway
Contract / installation period:	2021
Delivery:	25 poles WOPAS Light 10-12m
Description:	By state road 118, close to old Svinesund bridge, border between Norway and Sweden.



IV. AGRICULTURE

Customer:	Fjøsystmer, Norway and Sweden
Contract / installation period:	2019 - 2023
Delivery:	Ø 10cm, 1.75m, many thousand
Description:	Posts, non-toxic and no corrosion in a very corrosive environment. In 2021 WOPAS got an innovation award for this product at agriculture trade fair Agroteknikk in Norway.



Customer:	Private, Örebro area, Sweden
Contract / installation period:	2018
Delivery:	20 pcs
Description:	Ø 13cm horse jump poles – evaluated after 5 years of wear and tear



Customer:	Private farmer, Östergötland county, Sweden
Contract / installation period:	2021
Delivery:	18 poles cylindrical Robust ø 19cm
Description:	Pole barn. This prototype project triggered WOPAS to launch a new series of pole barn designed according to Eurocode and ø 25cm pole.



Customer:	Private farmer, Skurdalen, Geilo, Norway
Contract / installation period:	2023
Delivery:	15 poles cylindrical ø 25 cm, glulam 140x495mm, high profile roof
Description:	Pole barn, roof area approx. 160 m ² , snow load area 6,5 kN/m ² .



Customer: Private farmer, Mezzocorona, Trentino, Italy
Contract / installation period: Q4 2023- Q1 2024, installation starting after 2023 harvest
Delivery: 11 poles cylindrical Robust ø 19cm + 68 poles cylindrical ø 10,5cm
Description: Vineyard poles, substitute for concrete poles, reducing CO2 by 75%



V. CONSTRUCTION GENERAL

Customer: Private mountain lodge owner, Norway
Contract / installation period: 2020
Delivery: 3 pcs WOPAS sleepers.
Description: Small outhouse put on WOPAS non-toxic sleepers enabling fast installation and future relocation.



Customer: Ålhytta AS, holiday lodge manufacturer, Norway
Contract / installation period: 2023
Delivery: 14 pcs WOPAS system pole Robust ø 19 cm, L 6m.
Description: House put on piles drilled down to rock ground saves excavation, mass moving, concrete / co2 and production cost.



Customer: Laksesytemer AS, fish feeding manufacturer, Norway
Contract / installation period: 2022
Delivery: 30 pcs WOPAS rectangular pre-cambered glulam 18.4m
Description: Used for onshore fish farm feeding system, substituting stainless steel offering much lower CO2 footprint and cost efficient solution



VI. PLAYGROUNDS

Customer: Høyt og Lavt, climbing playground builder and operator, Norway
Contract / installation period: 2022
Delivery: 10 pcs WOPAS system pole Robust ø 19 cm
Description: WOPAS poles proved fully compatible with climbing playground concept of Hoyt og Lavt.



Customer:	Holmalunds IF, sports club, Sweden
Contract / installation period:	2021
Delivery:	14 pcs WOPAS system pole Midsize \varnothing 16 cm, 8 m 19 pcs WOPAS low voltage pole LIGHT, 8 m
Description:	WOPAS poles for ball stop netting, delivered by Laxen Specialnät AB



I. COMING UP – SOLAR RACKS

Customer:	Bruse, Norway
Contract / installation period:	Q4 2023
Delivery:	1 pcs WOPAS solar rack system, \varnothing 10 cm and \varnothing 19 cm poles
Description:	Prototype installation preparing for larger solar parks 2024 and 2025.

