

Vineyard Frost Protection in Southeast England

HEATCOM
SMART HEATING SOLUTIONS



Vineyard
heating cables



Southeast
England



Frost
protection



The Goal

In spring 2025 we installed a vineyard frost protection system together with Heat Mat at a commercial vineyard in Southeast England, with the intention of obtaining empirical data on the efficacy of the heating cables in real-world circumstances.

Heatcom's Solution via Heat Mat

Our heating cables were installed on three rows of Pinot noir and these were monitored and the results compared to those seen at control rows on either side.

The test system was left in place throughout the growing season and during all winter work, and the cables were not adjusted in spring 2026, but instead were left where they were rather than repositioning them for best effect.

The aim was to replicate how the system would be used in a normal application even if that meant some cables were positioned sub-optimally.

About Heatcom

At Heatcom, we are specialists in electric heating solutions for indoor and outdoor environments.

Founded in Denmark, we deliver high-quality, energy-efficient and easy-to-install systems to customers around the world. Our product range includes underfloor heating, ice and snow melting systems, heating cables, foil heating and thermostats.

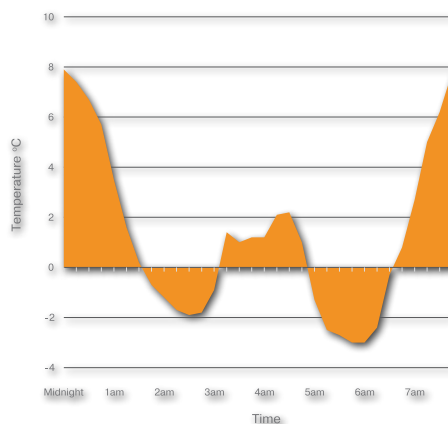
Spring 2025

This vineyard experienced a severe frost on the 6th May 2025, well after bud-burst and when four leaves had separated. After warm daytime temperatures of up to 16°C the overnight dry bulb temperatures dropped to -3°C in a rare double-dip frost event. The vines experienced more than three hours of sub-zero temperatures at this particularly vulnerable time, and around one and a half hours of temperatures between -2.4°C and -3.0°C.

Returning to the vineyard after the frost event the unheated vines in the control were visibly damaged and had suffered an average bud/shoot loss of 3.89 per vine, whereas the protected vines lost an average of only 0.66 buds/shoots per vine; an 83% reduction in the damage caused by frost.

All data was independently collected and was taken prior to shoot thinning.

Frost event temperature data



Project in detail

Date Installed

Spring 2025

Location

Southeast England

Client

Commercial vineyard

Installer

Heat Mat

Grape variety

Pinot noir

System Specifications:

- Vineyard heating cables
- Low-output and high-output versions
- Three rows of Pinot noir
- Control rows on either side
- All data independently collected

**An 83% reduction
in the damage
caused by frost**

KEY RESULTS

6x

Protected vines produced six times the weight of grapes as unprotected areas

Data from high output cable tests in Southeast England vineyard in spring 2026

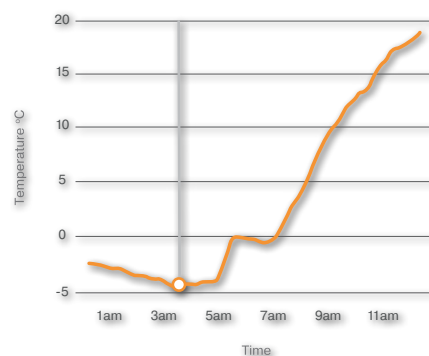
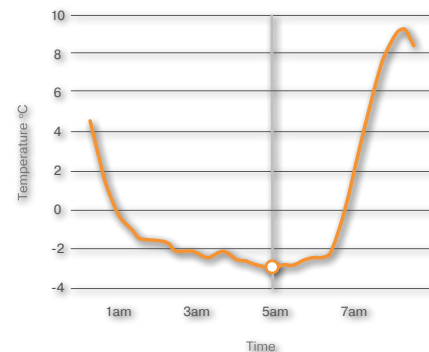
Spring 2026

In late spring 2026 the test site was unfortunately hit by two devastating frosts. On the morning of 25th April a seven hour frost event saw temperatures falling to -4.6°C , and then on the very late date of 11th May a five hour frost event saw temperatures fall to -2.9°C . Many vineyards around Southeast England were hit badly by the same weather conditions and in the words of one vineyard manager these were “the worst spring frosts I have experienced in 25 years”; we could not envisage a tougher test for our heating cables.

The results in our test area were spectacular. In the unprotected control area bud and shoot losses were between 80% and 100%, whereas the vines protected by heating cables only lost between 15% and 30% of buds and shoots over the two events. By early June the visual difference in vine growth in the heated vs unheated vines could be easily seen from 50m away.

There were good numbers of flowers on the heated vines with far less seen in the control area. Alternative frost protection systems being tested on site were overwhelmed by the frost events with two frost ‘solutions’

Frost event temperature data

Min -4.6°C - Saturday 25th April at 3:30amMin -2.9°C - Monday 11th May at 5:00am

apparently showing little benefit at all compared to the unprotected vines.

2026 Harvest

We returned to the vineyard in September 2026 to assess how well the spring results had translated into a meaningful increase in harvestable grape production.

Either side of the heated vines, the control areas had an average bunch count of 3 bunches per vine, whereas vines protected by our low-output heating cable had an average of 10 bunches per vine, and the vines using the high-output cable had an average of 18 bunches per vine, 500% more than the unheated areas.

Weighing the bunches showed that the average bunch weight for the heated areas was 4.3% heavier than for the control area, and the heated bunches were ripening earlier than the controls. Although measurements were taken pre-harvest, the grapes from the heated area were already showing a higher sugar content and lower acidity than the control areas with a TSS Brix score of 19.1 (control area 17.7) and Total Acid g/l of 12.4 (control area 14.2).

Sample ID	Date	TSS °Brix	Oe	Pot Alc	Total Acid g/l	pH	Alpha Amino mg/l	Amino mg/l	YAN	Malic Acid g/l
NON-HEATED PN	10/09/2026 09:55:40	17.7	74	9.73	14.2	2.77	139.0	132.5	248	8.5
HEATED PN	10/09/2026 09:53:15	19.1	80	10.52	12.4	2.93	201.9	138.6	316	6.9

Tests made with a Foss OenoFoss™ and carried out independent of Heat Mat/Heatcom

Heatcom Corporation A/S
Barmstedt Allé 6
5500 Middelfart
Tel. +45 63 41 77 77
Sales@Heatcom.dk



Conclusion

It is clear from the 2025 and 2026 results that our vineyard frost protection can provide significant protection for vines during prolonged and severe radiation frosts even late in the season.

The protected vines had up to six times the weight of grapes as the control area, were earlier to ripen and had a higher quality juice than the unheated vines.

Per hectare

Extrapolating these results over a hectare (3,333 vines per ha, 2.5m row width and 1.2m vine spacing) would result in a harvest of 1.05 tonnes without heating, 3.7 tonnes with the low-output cable and 6.4 tonnes with the high-output cable.

Contact us

Questions about your next installation?
Contact us at sales@heatcom.dk or +45 63 41 77 77.

**Earlier to ripen
and a higher
quality juice**



Bunch counts per 10 vines - 10th September 2026

Test area	Bunches	Min per vine	Max per vine
Low-output heating cable	103	0	17
High-output heating cable	178	6	32
Control area south - no treatment	29	0	5
Control area north - no treatment	32	0	7
Control area north 2 - hormone treatment	35	0	8

Bunch counts were randomised and were carried out independently of Heat Mat/Heatcom

**Up to six times the weight of grapes as the
control area**



Heatcom Corporation A/S
Barmstedt Allé 6
5500 Middelfart
Tel. +45 63 41 77 77
Sales@Heatcom.dk