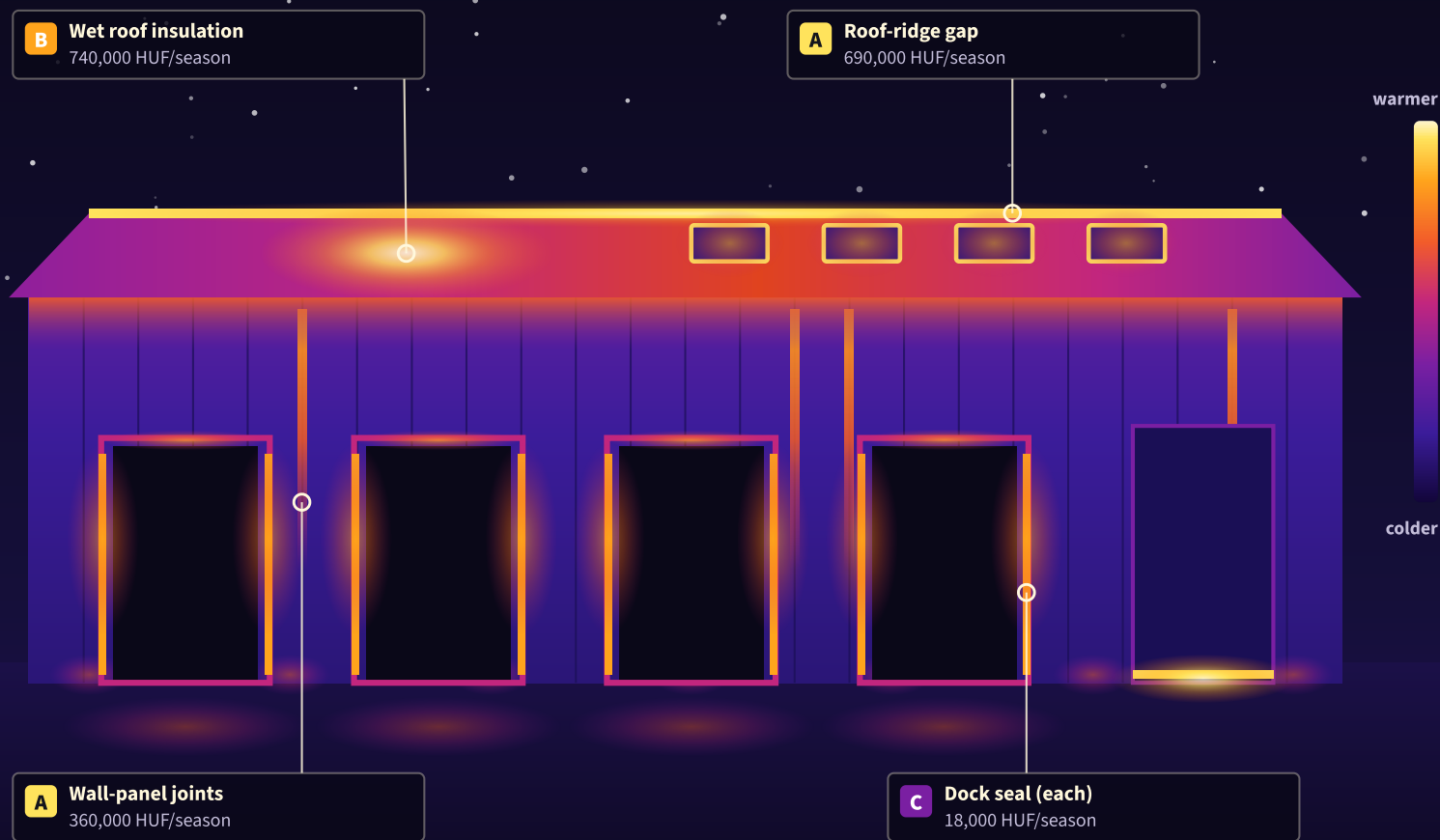




We show where heat escapes from your building, what it costs per heating season, **and what to fix first.**

Engineering thermal-imaging survey and 3D heat map for warehouses, production halls, retail and agricultural buildings.



Night-time thermal survey

3D heat map

HUF-quantified action list

Illustration: a fictional hall, simulated thermal image. Not customer data. The labels show estimated values from the worked example ("Warehouse, large level").

NYÍREGYHÁZA · TISZAVASVÁRI · TOKAJ · HAJDÚNÁNÁS · TISZAÚJVÁROS AND SURROUNDINGS

Engineering thermal-imaging survey – not an accredited or certified inspection. It does not replace an energy performance certificate, a statutory energy audit, mandatory electrical-safety or fire-safety inspections; those are carried out by professionals authorised under Hungarian law.

What you get from the survey

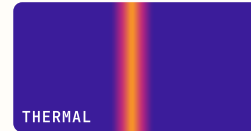
The product is the analysis, not the thermal pictures: every finding comes with a defined location, a photo pair, the likely cause, an estimated loss and a fix suggestion.

-  **Engineering report (PDF)**
10–15 pages: method, survey conditions, findings, assumptions, ranges.
-  **Interactive 3D heat map**
A browser link; thermal images registered on a 3D model of the building (3D package).
-  **Action list (XLSX / PDF)**
A / B / C priority, cost band and payback: ready to use for quotes.
-  **Raw radiometric files**
The images are yours: we hand them over for your own analysis.
-  **Walkthrough meeting**
45 minutes (Quick diagnostic) or a 60-minute decision meeting (3D package).

One finding, as an example

Wall-panel joints open A

EXAMPLE · WAREHOUSE, MEDIUM LEVEL



Location	marked on the 3D model; 35 m × 2 mm
Likely cause	aged sealant in the wall-panel joints
Estimated loss	110 W/K · 4,800 kWh · 630 m ³ gas 270,000 (210,000–380,000) HUF /season
Fix suggestion	re-seal the joints: 160,000 (88,000–280,000) HUF
Payback	7 months

How it works

-  **Night-time survey**
After sunset, in the heating season (roughly late October to March): thermal images from outside and inside, visual photos, dimensions.
-  **3D registration**
We register the thermal images on a 3D model of the building, so every defect has an unambiguous, measurable location.
-  **Engineering analysis**
Building-services practice plus data processing: cause, W, kWh, HUF/season with a range, fix suggestion, A / B / C priority.
-  **Delivery**
Report, 3D heat map, action list, raw files and a meeting: within 10 working days.

What we typically look for

- loading-dock seals and leveler pits
- perimeter and bottom seals of doors
- wall-panel joints
- roof-ridge and skylight gaps
- wet roof insulation
- thermal bridges at column bases, eaves and parapets
- air curtains, cold-store doors
- warming terminals in electrical cabinets (screening)

Survey conditions (honestly)

- indoor–outdoor temperature difference of at least 10 K (preferably 15 K)
- at least 4 hours after sunset or before dawn, no sun on the facade
- wind below 5 m/s, no rain, dry surfaces
- heating stable for at least 24 hours
- if the night does not qualify: free rescheduling (up to 2 times [confirm])

In summer: flat roofs (at dusk after a sunny day), PV, electrical cabinets under load, cold stores and cellars. The method follows the principles of MSZ EN ISO 6781-1:2023; we do not claim conformity certification.

Example: warehouse, 2,400 m²

EXAMPLE / ILLUSTRATION

60 × 40 m, 9 m high, older sandwich-panel walls and roof, 16 °C, gas radiant-tube heating, 4 loading docks and 2 sectional doors. Three levels of increasing severity.

Defect level	Loss W/K	Cost, HUF/season central (range)	Share of heating bill	Fix cost (all) HUF, central	Payback months	A-items only payback, months
Small, localised 3 defects: 1 dock side pad, 1 door bottom seal, 6 m ² wet roof	47	120,000 (93,000–160,000)	1.5 %	520,000	54	1/3: 22
Medium 8 defects: 3 dock seals, 2 doors, 35 m panel joint, 35 m ² roof, thermal bridge	250	620,000 (490,000–880,000)	7.6 %	2,700,000	52	1/8: 7
Large, widespread 13 defects: every dock and door, ridge and skylight gaps, 90 m panel joints, 140 m ² roof	1,100	2,700,000 (2,200,000–3,900,000)	26.6 %	8,900,000	39	3/13: 12

Estimate at 9 October 2026 gas prices (40.4 HUF/kWh, range 32.1–56.9); the uncertainty of a single item is typically ±30–50 %. Model-based estimate, not a guarantee; savings occur only if the fixes are carried out.

Honestly: for small, localised defects the survey fee (489,000 HUF, 275,000 HUF in the pioneer programme) does not pay back from the loss alone. At medium level the quick-payback A-items plus the survey pay back within 29 months, at large level within 15 months (flat today's gas price, central value).

Packages and prices (net, + VAT)

Quick diagnostic

2D survey + HUF-quantified loss list

from 190,000 HUF

- exterior + interior thermal images, annotated catalogue
- A / B / C findings list, estimated HUF/season
- 10–15 page PDF, 45-minute walkthrough

up to 1,000 m²; +70 HUF/m² up to 2,000 m²

3D package

3D heat map + engineering analysis

from 390,000 HUF

- the Quick diagnostic + 3D heat map
- breakdown per building element, action plan
- scenario table, 60-minute meeting

up to 1,500 m²; +110 HUF/m² up to 5,000 m²

Roof / PV drone

drone thermal survey

from 140,000 HUF

- thermal orthomosaic, coordinate-referenced defect map
- wet flat roof, PV hot spots
- PDF report with follow-up checks

up to 2,500 m²; subject to airspace and permits

Annual programme

winter survey + summer check + re-scan

from 285,000 HUF

- base package + summer visit
- screening of up to 10 electrical cabinets
- re-scan of repaired items, payback tracking

3D-based: from 585,000 HUF; 1.5 × the base price

Pioneer programme, 2026/27 heating season

LIMITED TO 10 FACILITIES

For the first 10 facilities: **Quick diagnostic 135,000 HUF, 3D package 275,000 HUF** (net), same scope and quality (Quick diagnostic up to 2,000 m², 3D package up to 2,500 m²; order by 31 January 2027, survey by 31 March 2027 [confirm](#)). In return we ask for written consent to an anonymised case study (no name, logo or address; you approve the text), a 30-minute feedback interview and a follow-up call after six months.

Payment

50 % on order, 50 % on delivery of the documentation; bank transfer within 8 days

Delivery

10 working days from the on-site survey; express: 5 working days (+20 %)

Travel

Free up to 40 km from our Tiszavasvári base; 40–80 km: 15,000 HUF; 80–130 km: 30,000 HUF

Price example: 2,400 m² warehouse, 3D package: 390,000 HUF + 900 m² × 110 HUF = 489,000 HUF + VAT; 275,000 HUF + VAT in the pioneer programme.

What we do not do

- ✗ We do not promise savings: the figures are estimates, with ranges and assumptions.
- ✗ Not every hidden defect is visible to a thermal camera.
- ✗ We give no structural, fire-safety or electrical-safety opinion.
- ✗ Not an energy performance certificate and not a statutory energy audit; not the periodic inspection of electrical installations and not a fire-safety inspection.
- ✗ Not an accredited test, not a court expert opinion.
- ✗ We do not design or build. We can recommend contractors but accept no commission [\[confirm\]](#).

Fixed price known in advance: from 190,000 HUF + VAT. Statutory inspections (certificate, audit, electrical inspection) serve a different purpose – they prove compliance; we look for where the loss is and what it costs in forints. The two complement each other.

Contact

Request a quote

Send the facility address, heated floor area and heating type; the Request for quote form can be downloaded from the website. A quote is valid for 30 days and the final price is fixed.

E-mail	info@hokep3d.hu
Phone	[+36 ...]
Website	hokep3d.hu
Base	Tiszavasvári, north-eastern Hungary
Team	engineering team: building-services practice ([INN] years of field experience) and a mechatronics / smart-building engineer
Equipment	thermal camera: [hőkamera típusa, felbontás] ; drone only where airspace and permits allow
Provider	[Cégnév] · [székhely] · [adószám]

What happens next

1 Request

E-mail or the Request for quote form: address, heated floor area, heating type.

2 Quote

Valid for 30 days, the final price is fixed; order with a 50 % advance.

3 Survey and delivery

On a suitable night (roughly late October to March); delivery within 10 working days.

Service area: Nyíregyháza, Tiszavasvári, Tokaj, Hajdúnánás, Tiszaújváros, Polgár, Tiszalök, Újfehértó, Nagyálló, Hajdúböszörmény, Hajdúdorog, Rakamaz, Szerencs, Tarcál, Mád, Tállya, Kisvárd, Balmazújváros, Debrecen (north)

Engineering thermal-imaging survey – not an accredited or certified inspection. It does not replace an energy performance certificate, a statutory energy audit, mandatory electrical-safety or fire-safety inspections; those are carried out by professionals authorised under Hungarian law.

Images, sources, legal note

- Images: this brochure uses no third-party photographs; every graphic is our own illustration (SVG), so no image credits are required.
- The worked examples concern fictional but realistic facilities: Example / illustration, not customer data, not a promise.
- Method, parameters and sources: “Heat-loss worked examples 2026” (white paper, downloadable from the website).
- Energy-price basis: 9 October 2026; Hungarian business gas, net, marginal price; the contract premium is an assumption. Prices are net, in HUF, plus VAT.