# **SONOTIZ ATA** — Thermal and Acoustic Insulation Mat

**Scientific Product Description & Advanced Installation Guide (v2.0)**

## 1. Product Description

**Product Name: SONOTIZ ATA**
**Manufacturer: WOOD TECH SOLUTIONS SRL**
**Brand: SONOTIZ**
**Made in: Republic of Moldova**

SONOTIZ ATA is a scientifically engineered multi-layer composite insulation mat designed to provide advanced thermal reflection, acoustic dampening, vapor control, and moisture resistance. It serves as a high-performance complementary insulation solution in both new constructions and retrofit projects, specifically in roofing systems.

Combining a dense elastic glass fiber core (SONO ECO) with a laminated breathable base layer and a metallized vapor-resistant top layer, SONOTIZ ATA effectively manages all forms of energy transfer: conduction, convection, and radiation. Its hybrid structure allows superior reflective insulation performance while also providing significant soundproofing and vibration dampening.

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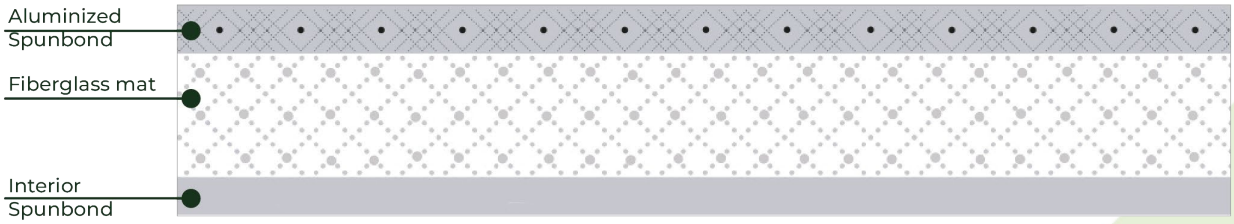
## 2. Material Composition




| Layer | Material Type | Characteristics |
|---|---|---|
| Top Layer | Metallised Non-Woven Spunbond | Vapor barrier, reflective surface, non-breathable, radiant barrier |
| Core Layer | SONO ECO (needle-punched E-Glass fibers) | Elastic, dense, non-combustible, thermal and acoustic insulation |
| Bottom Layer | White Spunbond Laminated (breathable) | Mechanical protection, breathable surface |

Bonding Method:

- Ultrasonic welding along 1.5 m width edges
- 5 longitudinal stitch lines across full width (1.5 m), mechanically bonding all layers

## 3. Key Technical Data

| Property | Unit | SONOTIZ AT | Test Standard / Remarks |
|---|---|---|---|
| Thickness | [mm] | 12 ± 15% | Measured across stitched zones (EN 823) |
| Density | [kg/m²] | 1.6 ± 10% | ISO 9864 |
| Weight | [kg/roll] | 22±0.5 | Total composite weight |
| Width | [m/roll] | 1.5±5% | EN 822 |
| Length | [m/roll] | 10±5% | EN 822 |
| Surface | [m²/roll] | 15±2.5% | |
| Thermal Conductivity (λ) | W/m·K | 0.040 | Core layer EN 12664:2011 |
| Impact Sound Insulation (ΔLw) | dB | 24 | ISO 10140-1 |
| Airborne Sound Insulation (Rw) | dB | 48 | ISO 717-1 |
| Vapor Permeability | Highly vapor resistant | Due to metallised layer | |

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| | | | |
|---|---|---|---|
| Fire Reaction (Core) | | A2:S1:d0 | EN 13501-1 |
| Fire Reaction (Surface Layer) | | Class E | EN 13501-1 |
| Resistance to Water Penetration | | W1 class top metallised layer | EN 1928:2000 |
| Physiology | | it's not dangerous | |
| Toxicology, Chemical Safety | | Non-toxic | Fiberglass core, binder-free |
| Types of Fibers | | E-Glass | |

## 4. Functional Advantages

- Reflective thermal insulation: reduces radiative heat transfer.
- Effective soundproofing and vibration dampening.
- Vapor barrier function, protecting structures against condensation.
- Moisture resistance: non-corrosive, mold-resistant E-glass core.
- Fire resistant core (A2:S1:d0 non-combustible classification).
- Lightweight, easy to install and cut on-site.
- No chemical binders; purely mechanical bonding ensures clean indoor air quality.
- Extended lifespan due to durable multi-layer construction.

## 5. Application Fields

- Pitched roof insulation (internal or external)
- Over-rafter reflective insulation
- Under-tile additional insulation layer
- Combination with PIR, mineral wool, or fiberglass to enhance thermal/acoustic performance
- Attic renovation and roof retrofitting
- Industrial or commercial roof upgrades
- Vapor barrier function in humid or coastal climates

## 6. System Behavior & Scientific Positioning

SONOTIZ ATA functions as a complementary hybrid insulation layer. While it is not designed to replace bulk insulation (such as PIR or mineral wool), it significantly enhances the overall thermal resistance of the roof by addressing:

- Radiation control: Reflects radiant heat back into building in winter, and outward in summer.
- Conduction control: Glass fiber core slows conductive heat transfer.
- Vapor control: Metallised layer prevents moisture penetration.

- Acoustic control: Dense elastic core absorbs impact and airborne sound.

**Energy Efficiency Contribution:**

- Reduces reliance on thicker traditional insulations.
- Improves total roof system U-value.
- Allows optimization of insulation design with thinner profiles.

**Fire Safety:**

- Core remains fully non-combustible even in high-temperature events.

**Moisture Safety:**

- Both the reflective film and glass fiber core are highly resistant to moisture accumulation and mold formation.

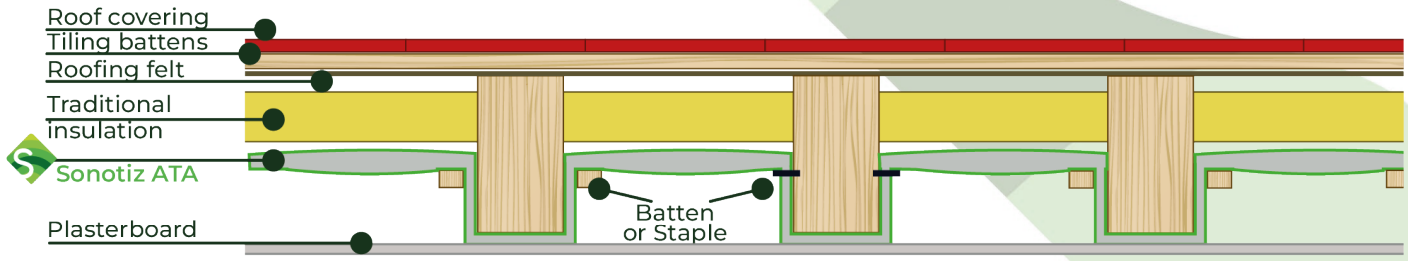
## 7. Advanced Installation Guidelines

### A. Positioning & Air Gaps

- ✓ Preserve an air gap of minimum 20-30 mm on at least one side of SONOTIZ ATA.
- ✓ Ideally, maintain air gaps on both sides if system design allows.
- ✓ Avoid compressing material between two solid layers which reduces reflective performance.

### B. Installation Scenarios

i) Internal Roof Installation (Below Rafters)




- Install horizontally across rafters.
- Leave 10–20 mm slack to prevent tension.
- Staple to rafters using corrosion-resistant staples every 150–200 mm.
- Overlap adjacent mats by 100 mm minimum.
- Seal overlaps with aluminum vapor tape.
- Maintain a ventilated air cavity between SONOTIZ ATA and the interior gypsum board or cladding.

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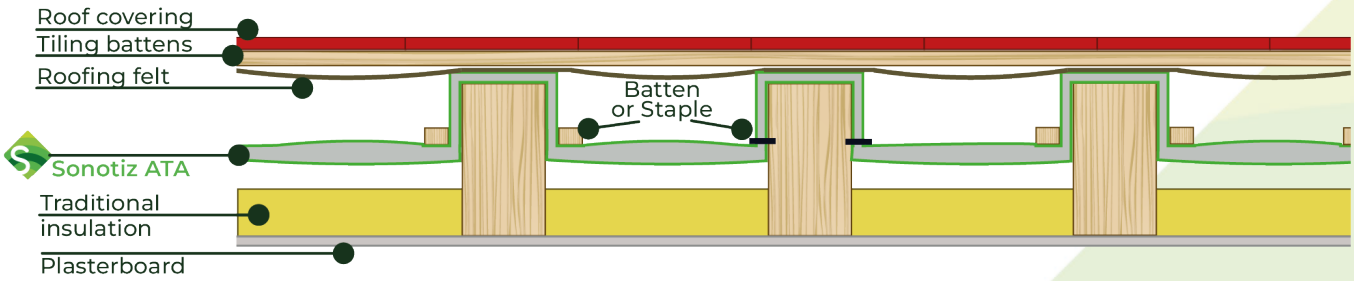
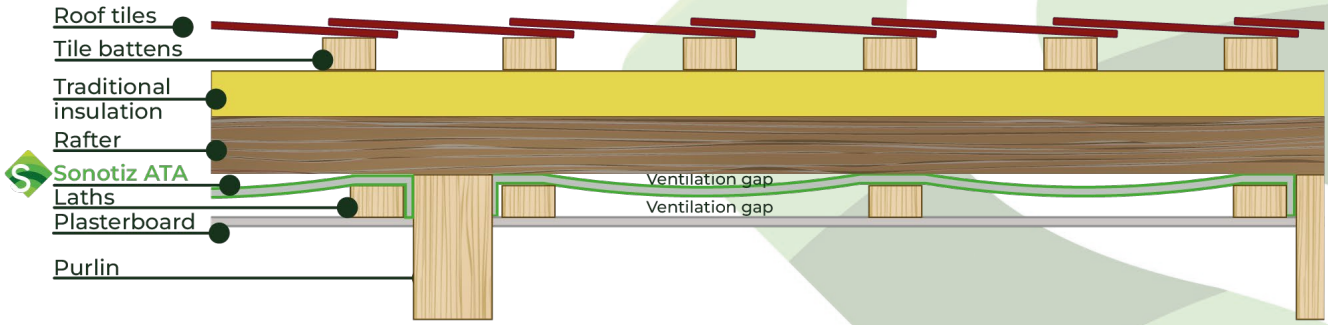
### *ii) External Roof Installation (Over Rafters)*

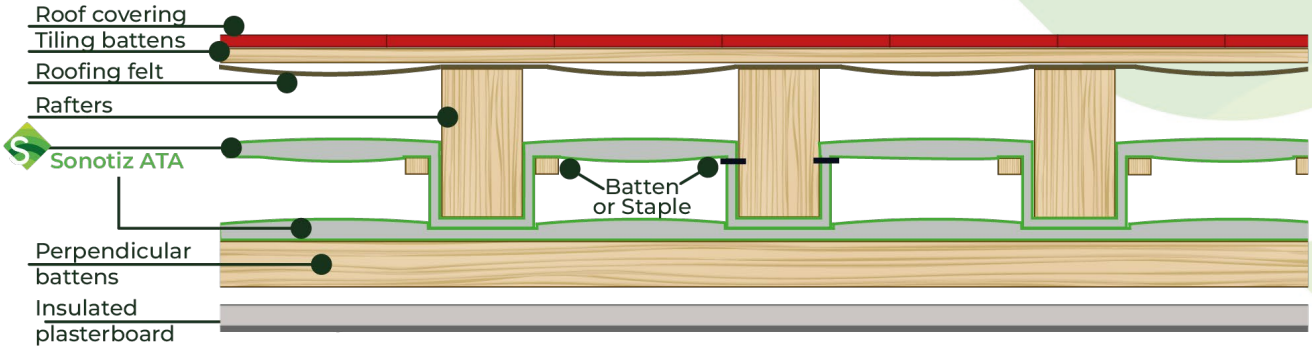



- Place SONOTIZ ATA directly on rafters.
- Face metallised layer upwards.
- Overlap 150 mm over adjacent rolls.
- Seal joints with aluminum adhesive tape.
- Install counter battens (min. 40 mm height) perpendicular to rafters.
- Apply roofing membrane and tiles above counter battens.

### *iii) Between Purlins: - Version for the insulation is on top of our material.*




### *iiii) Two Layer Application: - ENSURE at least 40mm air gap between layers*

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### C. Combination with Bulk Insulation

- May be combined with PIR boards, mineral wool, fiberglass batts, spray foam.
- Allows reduction of bulk insulation thickness while improving U-value.
- Acts as final radiant barrier and vapor seal layer.
- Contributes to improved summer overheating control.

### D. Mechanical Fastening

- Staple edges and stitching zones carefully.
- Use wide crown staples or batten systems depending on load requirements.
- Avoid unnecessary surface perforations.

### E. Waterproofing & Airtightness

- Ensure tight seals at overlaps using aluminium adhesive tapes.
- Avoid open edges; all joints must be sealed to preserve vapor barrier efficiency.

### F. Stitch Line Consideration

- Stitch lines have minimal vapor leakage risk.
- Proper overlap and taping ensures integrity.
- No additional covering of stitch zones is typically required.

## 9. Compliance Notes

- SONOTIZ ATA data is based on internal laboratory measurements and field simulations.
- System thermal performance depends on proper installation with preserved air gaps.
- Actual U-value improvements depend on total roof system design.
- Always verify local building code requirements before installation.

SONOTIZ ATA offers a scientifically validated hybrid insulation solution that maximizes both reflective insulation principles and acoustic control, while fully respecting fire safety, vapor management, and moisture durability.

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