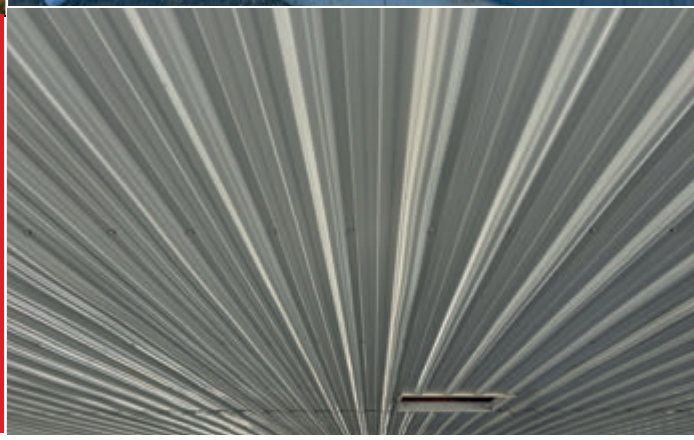
TK9 AG LINER

Rigid PVC Building Panels

KLAR MULTILAYER THERMO-ACOUSTIC PANELS

TECHNICAL DATA SHEET



1. PRODUCT DESCRIPTION

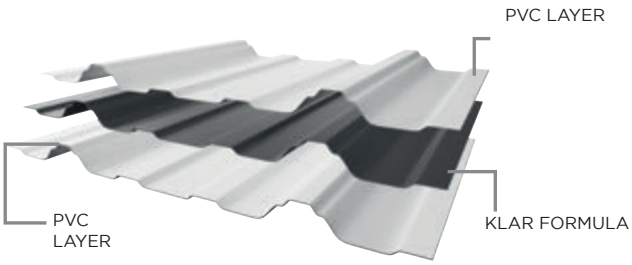
Klar multilayer thermo-acoustic panels are composed of a series of layers, manufactured with the most advanced co-extrusion technology.

Each panel has two layers of rigid PVC (unplasticized polyvinyl chloride) that form the body and give structure, foamed PVC to generate thermo-acoustic insulation, UV protection agents, stabilizers, and pigments. These components together result in non-flammable and insulating (great R-value) properties, as well as in high resistance to corrosion from humidity, microbiological, and chemicals, making our panels a superior alternative to traditional coverings such as metal, fiber cement, wood and others used in agricultural and rural structures.

Our panels are ideal for large and medium size structures including hog, poultry, livestock farms, barns, calf barns, carwash facilities, garages, storage units (hay, fertilizers, machinery, etc.) and even in smaller projects like sheds, shelters, chicken coops, dog kennels, among others.

Also, their cleanability and minimum maintenance make them suitable for high sanitary safety activities such as food processing plants, farms and agro-industrial, pharma-industry, among others.

Thanks to its high resistance to humidity and saltpeter, it also is ideal for coastal constructions such as naval installations, boat storage, fishing markets and port facilities.



2. GENERAL CHARACTERISTICS

FIRE RESISTANCE	DIN 4102 Classification, hardly flammable. In case of fire, flames have low propagation and reduced smoke emission. In addition, it does not generate thermal drip.
HIGH CORROSION RESISTANCE	Our panels can be subjected to saline, alkaline or acidic solutions with a concentration of less than 60% during a continuous 24-hour exposure. Unlike other coverings, they do not rust, avoiding problems due to water leaks and favoring water-exposed environments.
THERMAL INSULATION	Due to their low thermal conductivity, the transmission flow of external temperature (heat and cold) into a room is very low, improving efficiency and lowering your utility bills. The insulation coefficient is up to 25% higher than those of metal coverings.
MECHANICAL PERFORMANCE	Great adaptability to weather conditions within -10°C and 45°C.
EASY INSTALLATION	From being more user-friendly, not having sharp edges nor absorbing heat from the sunlight.
LEAD & RUBBER FREE	We guarantee our panels are manufactured using lead-free and rubber-free additives.
100% RECYCLABLE	Our materials are 100% recyclable and environmental friendly.
MORE THAN 20 YEARS OF USEFUL LIFE, FREE OF CRACKS	The upper layer contains UV protection, which allows having a great durability even outdoors, maintaining its color and properties.
INNOCUOUS	Using a proper cleaning and maintenance to avoid mold formation, our panels ensure high levels of innocuousness making our panels ideal for food plants, agriculture and pharma industries.

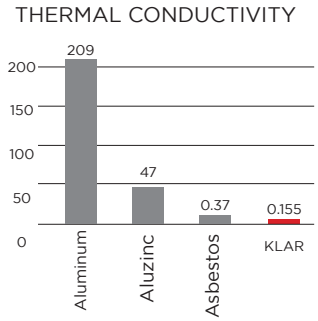
3. PHYSICAL AND MECHANICAL PROPERTIES

Properties	Unit	TK9 Ag Liner	TK9 Ag Liner
Thickness*	mm	1.5	2.0
Specific weight	lib/sqft	0.533	0.727
Radius of curvature	ft	20	20
Ridge height	mm	23	23
Transverse overlap	Ridge	1	1
Longitudinal overlap	In	10	
Thermal resistance	m^2K/W	0.0097	0.0129
Thermal conductivity	W/m.k	0.155	
Temperature range	°F	14 - 113	
Maximum impact resistance	J	1	2

*The thickness of the panel may vary by +/-10%. For greater thicknesses and specific requirements, consult with your Klar executive or advisor.

4. ADVANTAGES OVER OTHER MATERIALS

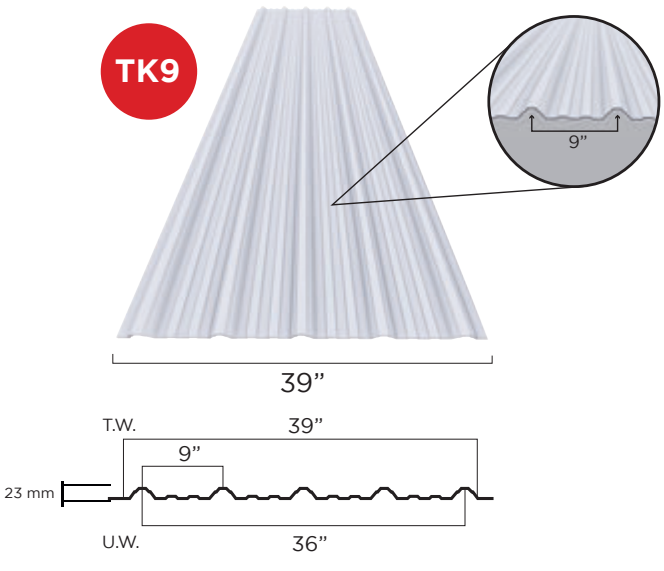
- Low density, good absorption of noises and vibrations.
- Electrical insulation or low conductivity.
- Great chemical resistance.
- Permeability to electromagnetic waves.
- Excellent corrosion resistance and thermal insulation.



5. PRODUCT PRESENTATIONS

DIMENSIONS OF MULTILAYER THERMO-ACOUSTIC PANEL
Klar TK9 AG Liner

Available colors: White	Customized Colors upon request*: Red, blue, green



Lengths and widths: +/- 1cm tolerance

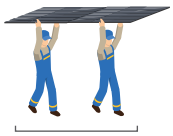
6. CLEANING AND CARE

- Water.
- 10% soap solution, 15 minutes exposure and rinse with water.
- 10% detergent solution, 15 minutes exposure and rinse with water.

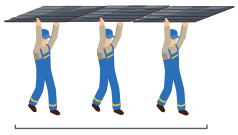
7. RECOMMENDATIONS

• Store panels inside a covered, ventilated, climate-controlled area with temperature that does not exceed 35C (95F) and with low humidity levels.
• Avoid unnecessarily stepping or kneeling on panels since this may cause product deformations due to uneven weight distribution.
• Panels may be stacked on a flat surface up to 1.5mts (approx. 5ft) of height.
• It is not recommended to install panels on top of flat surfaces such as false ceilings of any kind (drywall, wood, or the like) because this may create a 'heat chamber' that may alter or deform the product.
• If panels are exposed to natural or artificial heat during transportation, avoid covering them completely with stretch film or similar products due to risk of internal heat concentration that may affect the product.
• It is recommended not to use films or membranes as insulation underlayment to avoid heat concentration that may affect the panels.
• Panels should never be rolled up to avoid deformations or cracking due to the force applied on a molded, angular geometry like ones shown on the ridges.
• To ensure proper installation it is recommended using Klar's self-drilling fastener kits or similar with EPDM head-washer and caps.
• Avoid using rigid or cement sealants at drilling points. Instead, is recommended the use of flexible sealants that may allow yield during panel dilatation.
• To avoid potential indoors condensation on panels, it is recommended to consider a proper natural or artificial ventilation system.
• Panels should be carried to an upper level of a building using pulleys, and ropes must be placed at least in each end of the panel and one in the center to evenly distribute weight of panel during this method of handling.
• If panels are transported in a consolidated load combined with other products, panels must be placed horizontally and uniformly on a flat surface and do not place nor rest heavy items on panels to avoid dents or deformations during transit.
• Avoid leaving panels on truck exposed to high temperatures for more than 3 hours.
• The pre-drilled hole diameter on panel must be 4mm larger than the diameter of the self-drilling screw to allow yield for dilatation.
• Sealants used at drilling points along with fasteners must not be rigid because panels are prone to expand and contract and this may affect the performance of the panels.
• Based on the panel length, manual handling must consider the following crew positions:

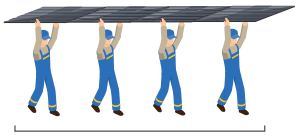
Up to 10Ft in length



Up to 20Ft in length



Up to 26Ft m in length



Up to 40Ft in length

8. LEGAL NOTES