

klar

TK12

Rigid PVC Building Panels

KLAR MULTILAYER THERMO-ACOUSTIC PANELS

TECHNICAL DATA SHEET



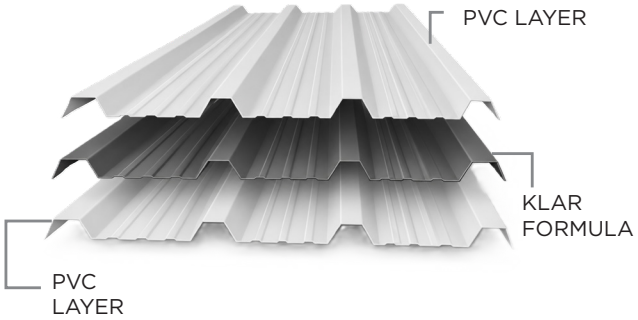
1. PRODUCT DESCRIPTION

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

Each panel has two layers of rigid PVC (unplasticized polyvinyl chloride) that form the body and provide structural strength, along with the Klar Formula, which provides thermo-acoustic insulation. UV protection agents, stabilizers, and pigments are also incorporated. Together, these components contribute to flame resistance, thermal insulation (high R-value), and high resistance to corrosion caused by humidity, microorganisms, and chemical agents, making our panels a superior alternative to traditional coverings such as metal, fiber cement, wood, and other materials used in agricultural and rural structures.

Our panels are ideal for large and medium-sized structures, including hog, poultry, and livestock farms, barns, calf barns, car wash facilities, garages, and storage units (hay, fertilizers, machinery, etc.), as well as smaller projects such as sheds, shelters, chicken coops, and dog kennels, among others.

TK12 Klar multilayer thermo-acoustic panels are designed for roofing applications in industrial, commercial, agricultural, and infrastructure projects where environmental protection, thermal performance, and durability are essential.



2. GENERAL CHARACTERISTICS

FIRE RESISTANCE	Fire reaction classification according to DIN 4102-1: B1 (hardly flammable). Additionally, the material meets the HB, CC1, and CC2 classifications, contributing to low flame propagation and improved fire safety performance.
HIGH CORROSION RESISTANCE	PVC provides resistance to corrosion caused by moisture and saline environments, unlike conventional metal roofing materials.
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 30 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.

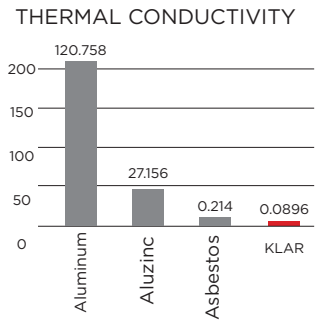
3. PHYSICAL AND MECHANICAL PROPERTIES

Properties	Unit	TK12	
Thickness*	mm	1.5	2.0
Specific weight	lib/sqft	0.682	0.772
Radius of curvature	ft	20	20
Ridge height	mm	38	38
Transverse overlap	Ridge	1	1
Longitudinal overlap	In	10	10
Thermal resistance	$h{\cdot}ft^2{\cdot}°F/BTU$	0.0551	0.0733
Thermal conductivity	$BTU/(h{\cdot}ft{\cdot}°F)$	0.0896	
Temperature range	°F	14 - 113	
Maximum impact resistance	ft·lbf	3.67	5.83

*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

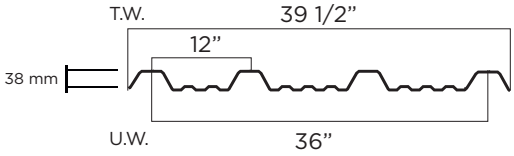
- Low density, good absorption of noises and vibrations.
- Electrical insulation or low conductivity.
- Great chemical resistance.
- Permeability to electromagnetic waves.
- Excellent corrosion resistance and thermal insulation.

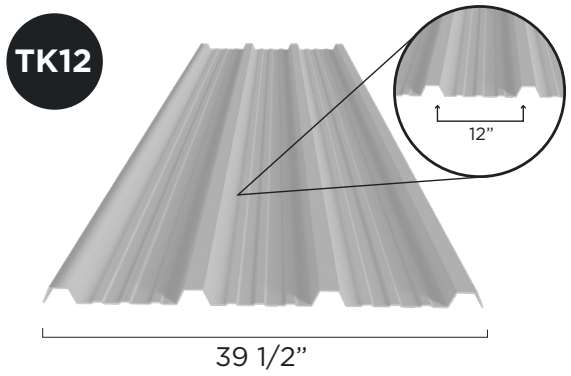


5. PRODUCT PRESENTATIONS

DIMENSIONS OF MULTILAYER THERMO-ACOUSTIC PANEL
Klar TK12

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.

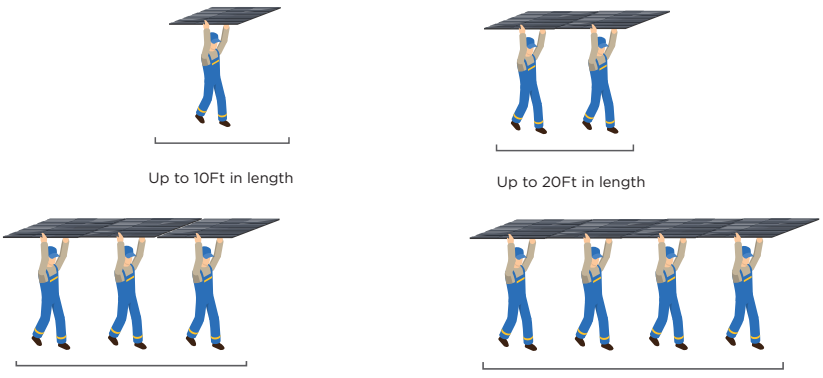
• If panels are transported in a consolidated load combined with other products, panels must be placed horizontally and uniformly on a flat surface and do not place nor rest heavy items on panels to avoid dents or deformations during transit.

• 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

All technical data collected in this technical data sheet are based on laboratory tests. Current data measures may vary due to circumstances beyond our control.
The information and in particular the recommendations on the installation and final use of Klar products are provided in good faith, based on the current Klar's knowledge and experience regarding its products, as long as these are properly stored, handled and transported; as well as installed under normal conditions. In practice, the differences in the materials, substrates and conditions of the work where the Klar products will be applied are so particular that from this information, from some written recommendation or from some technical advice, no guarantee can be deduced regarding the commercialization or adaptability of the product to a particular purpose, as well as no contractual liability. The property rights of third parties must be respected. All orders accepted by Klar are subject to Klar's General Contracting Clauses for the Sale of Products. Users should always refer to the latest edition of the Technical Data Sheet of the products; copies of which will be delivered at the request of the interested party or which can be accessed on the Internet through our website www.klar.us.com