

PRODUCT DATA SHEET – MLN

Section 1. PRODUCT DESCRIPTION

SPECIAL-HAMMER DRIVEN METAL FASTENER FOR FASTENING OF MINERAL WOOL – MLN

Special hammer-driven metal fastener for fastening of mineral wool MLN is made from galvanized steel for improved resistance to corrosion and fire. It comprises support washer and steel pin. Fastener MLN should be used to transfer loads of wind suction forces and applied as an additional mechanical fixing for the whole system (fastening of thermal insulation materials above 25m), recommended for:

- mineral wool
- mineral wool lamella board

Types of substrates on which fastener MLN can be installed:



Beton

Cegła ceramiczna
pełna, silikatowa

Gazobeton

Fasteners hold Technical Approval: AT-15-7960/2015



Materiał łącznika
- stal



Stalowa podkładka

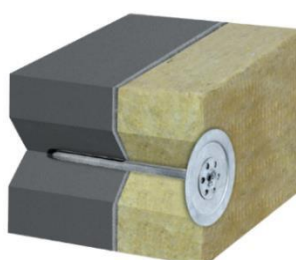
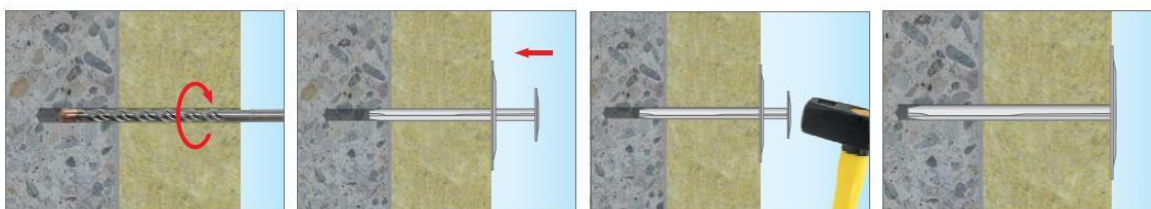


Łącznik ocynko-
wany



Section 2. METHOD OF INSTALLATION

1. Before installation identify the substrate and select suitable fasteners
2. Select adequate length of the fastener so that expansion zone is in the construction material of the wall
3. Minimum length of the fastener is: $L_d = t_{fix} + t_{tol} + h_{eff}$, where: t_{fix} - thickness of insulation material to be fixed, t_{tol} - thickness of sub-crusts (adhesive + existing plaster), h_{eff} - depth of fastener anchorage in the substrate (given in the sheet and in Technical Approval)
4. Before installation prepare the substrate as recommended by ETICS manufacturer
5. Fix thermal insulation panels correctly using an adhesive
6. Diameter of drilled holes should match diameter of the fasteners used
7. Drilled holes in substrates of solid materials should be deeper by min. 10 mm compared to the fastener anchorage depth
8. Clean the holes drilled in solid materials of drillings with a back and forth motion of the drill at a reduced speed, repeating it four times
9. Drill the holes in aerated concrete substrates without impact as this will cause breakage of walls of the substrate and reduce pull-out resistance of fasteners
10. Number of fasteners per 1m² should be defined in thermal insulation design. Recommended number of fasteners:
FOR WOOL:
- up to the height of 15m from the ground, as minimum use 8pcs/m² in the middle area of a wall and 10pcs/m² in a corner area
- above 15m from the ground, as minimum use 10pcs/m² in the middle area of a wall and 12pcs/m² in a corner area
Recommendation shall not replace thermal insulation design!!
11. Fix the fasteners so that the installation spot matches the area where adhesive is placed on a thermal insulation panel
12. Embed the fastener body so that the fastener washer is faced with thermal insulation material
13. Then using a hammer drive the fastener pin to firmly attach the fastener



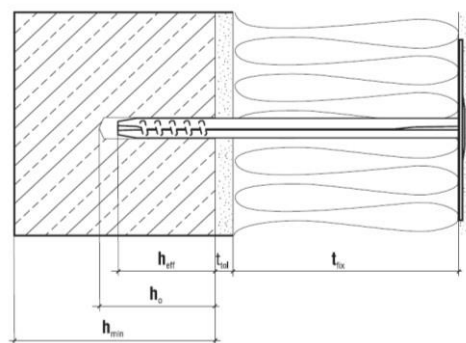
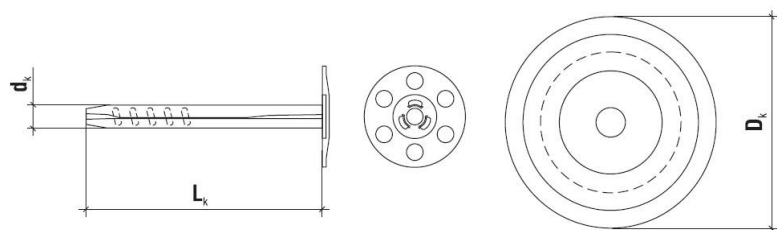
PRODUCT DATA SHEET – MLN

Section 3. TECHNICAL DATA

TECHNICAL PARAMETERS		
Parameter	Unit	Value
Plug diameter	d_k [mm]	8
Plate diameter	D_k [mm]	70
Anchorage depth	h_{eff} [mm]	50
Drilled hole depth	h_o [mm]	60
Plug material	[-]	Galvanized steel
Pin material	[-]	Galvanized steel
Approval	[-]	AT-15-7960/2015

STRENGTH PARAMETERS		
Substrate type	Density [kg/dm ³]	Characteristic pull-out resistance [kN]
Concrete C20/25 – C50/60	> 2.30	0.75
Solid clay brick	> 2.00	0.75
Calcium silica solid brick	> 2.00	0.75
Autoclaved aerated concrete	> 0.65	0.75

Partial safety factor $\gamma_M=2$ in absence of regulations



SELECTION TABLE				
Product code	Fastener diameter and length	Insulation material thickness [mm]		Number of pieces in a box
		New buildings (t_{tot} adhesive layer of 10mm)	Old buildings (t_{tot} adhesive layer of 10mm + old plaster of 20mm)	
MLN08140	8x140	80	60	250
MLN08170	8x170	110	90	250
MLN08200	8x200	140	120	250
MLN08210*	8x210	150	130	250
MLN08230*	8x230	170	150	250
MLN08250*	8x250	190	170	250
MLN08260*	8x260	200	180	250
MLN08280*	8x280	220	200	250
MLN08300*	8x300	240	220	250

*Product on request

Section 4. REMARKS

1. All previous versions of this Product Data Sheet shall cease to be valid
2. Data given in this Product Data Sheet is in accordance with current knowledge and published in good faith. KLIMAS Sp. z o.o. is not responsible for correctness and quality of the fixing if recommendations regarding method of use and installation are not followed.